Limit switches
OsiSense XC Standard

Catalogue

Telemecanique
Sensors

Contents

Limit switches
OsiSense XC Standard

OsiSense XC Standard, EN 50041 format

OsiSense XC Standard, industrial EN 50041 format

Limit switches OsiSense XC

Technical information

Limit switches
OsiSense XC Standard

Design		Miniature format	Compact format, CENELEC EN50047	
		Metal, pre-cabled	Plastic, 1 cable entry	Plastic, 2 cable entries
				
Enclosure		Metal	Plastic, double insulated	
Modularity		Head, body and connection modularity	Head, body and cable entry modularity	Head and body modularity
Conformity/Certifications		UL, CSA, CCC, GOST	CENELEC EN 50047 UL, CSA, CCC, GOST	
Body dimensions (w x h x d) in mm		30 x 50 x 16	31 x 65 x 30	58 x 51 x 30
Head		Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional Same heads for ranges XCMD, XCKD, XCKP and XCKT		
Contact blocks				
2 electrically separate contacts	snap action with positive opening operation	•	•	•
	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, IK 04	
Operating temperature		- 25°C... + 70°C		
Connection	**Screw terminals**	–	1 entry for ISO M16 or M20, Pg 11, Pg 13.5 cable gland or 1/2" NPT, PF 1/2	2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)
	Pre-cabled	Ø 7.5 PvR, CEI, halogen free, depending on model	–	
	Connector	Integral or remote M12 or remote 7/8"-16UN	M12	–
Type reference		**XCMD**	**XCKP**	**XCKT**
Pages		12	32 and 36	44

Compact format, CENELEC EN50047	Compact format, with reset		
Metal, 1 cable entry	**Plastic, 1 cable entry**	**Plastic, 2 cable entries**	**Metal, 1 cable entry**
			
Metal	Plastic, double insulated		Metal
Head, body and connection modularity	–		
CENELEC EN 50047 UL, CSA, CCC, GOST	UL, CSA, GOST		
31 x 65 x 30	31 x 65 x 30	58 x 51 x 30	31 x 65 x 30
Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional Same heads for ranges XCMD, XCKD, XCKP and XCKT	Linear movement (plunger) Rotary movement (lever)		
●	●	●	●
●	●	●	●
–	–	–	–
–	–	–	–
●	–	–	–
●	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
IP 66, IP 67, IK 06	IP 66, IP 67, IK 04 and IK06 (for XCDR)		
- 25°C... + 70°C			
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)	1 entry for ISO M20 or Pg 13.5 cable gland or 1/2" NPT
–			
M12	–		
XCKD	**XCPR**	**XCTR**	**XCDR**
38 and 42	54	58	56

Limit switches
OsiSense XC Standard

Design		"Classic" format		EN 50041 format	Industrial EN50041 format
		Metal, 3 cable entries	Metal, 1 cable entry	Plastic, 1 cable entry	Metal, 1 cable entry or connector
					
Enclosure		Metal		Plastic, double insulated	Metal
Modularity		Head, body and operator modularity			
Conformity/Certifications		UL, CSA, CCC (XCKM), GOST		CENELEC EN 50041 UL, CSA, CCC, GOST	
Body dimensions (w x h x d) in mm		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
Head		Linear movement (plunger) Rotary movement (lever) Rotary movement, multidirectional			
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 06		IP 65, IK 03	IP 66, IK 07
Operating temperature		- 25°C... + 70°C			- 25°C... + 70°C - 40°C or + 120°C depending on model
Connection	**Screw terminals (entry for cable gland)**	3 entries for ISO M20 or Pg 11 cable gland or 1/2" NPT	1 entry incorporating cable gland or tapped 1/2" NPT	1 entry for ISO M20 or Pg 13.5 cable gland	1 entry for ISO M20 or Pg 13.5 cable gland or 1/2" NPT
	Connector	–			Integral M12 or 7/8"-16UN
Type reference		**XCKM**	**XCKL**	**XCKS**	**XCKJ**
Pages		74	74	90	100

Limit switches
OsiSense XC Basic

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, 2 cable entries**
				
Plastic, double insulated	Plastic, double insulated			
–				
UL, CSA, CCC, GOST	CENELEC EN 50047 UL, CSA, CCC, GOST		UL, CSA, CCC, GOST	
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				
●	●	●	●	●
–	●	●	●	●
–	–	–	–	–
– –	– ●	● –	– ●	● –
–	●	–	●	–
–	–	–		–
–	–	–		–
–	–	–		–
IP 65, IK 04				
- 25°C... + 70°C				
–	1 entry for ISO M20 or Pg 11 cable gland Other cable entries *(3)*: ISO M16 x 1.5 and 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 *(3)*: ISO M16 x 1.5 and 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	–			
XCMN	**XCKN**	**XCNT**	**XCNR**	**XCNTR**
28	62	64	70	71

Limit switches
OsiSense XC Special

Design/Applications	**Very severe applications**	**Very severe material handling applications**	**For hoisting and material handling applications (XCR); for conveyor belt shift monitoring (XCRT)**	**For hoisting and material handling applications**	**Subminiature format and microswitch. Applications requiring high precision and a low operating force**
	Metal, 1 cable entry	**Metal, 3 cable entries**	**Metal or polyester, 1 cable entry**	**Metal or plastic, 3 cable entries**	**Plastic, pre-cabled**
					
Enclosure	Metal	Metal	Metal or polyester	Metal or plastic	Polyester
Features	Head and body modularity	–	–	–	–
Conformity/Certifications	UL, CSA, GOST	CSA, GOST	CSA (XCR) CCC (XCR), GOST	CE, UL, CSA, CCC, GOST	CE, UL
Body dimensions (w x h x d) in mm	40 x 81 x 41	77 x 83 x 44	85 x 95 x 75	118 x 77 x 59 (metal) 118 x 77 x 67 (plastic)	Depending on type
Head	Linear movement (plunger) or rotary movement (lever)	Linear movement (plunger)	Rotary movement (lever)	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	IP 66/IK 07 (metal) IP 65/IK 04 (plastic)	IP 67 or IP 40 depending on model IP 00 (tags)
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	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	**XC2J**	**XC1AC**	**XCR XCRT**	**XCKMR XCKVR**	**XEP**
Pages	Please refer to our catalogue “Limit switches OsiSense XC Special”				

Limit switches
Preventa XCS
Safety switches

Safety limit switches and guard switches Preventa XCS								
Standard		**With lever or hinge**	**Actuator operated**					**Coded magnetic for detection without contact**
Miniature format	**Compact format**	**Compact format**	**Miniature format**	**Compact format**	**Industrial format with or without locking**		**Rectangular format with solenoid interlocking**	**Rectangular or cylindrical format**
Metal, pre-cabled	**Metal or plastic, 1 cable entry**	**Plastic, 1 or 2 cable entries**	**Plastic, pre-cabled**	**Plastic, 1 or 2 cable entries**	**Metal, 1 cable entry**		**Metal, 2 cable entries or plastic, 1 cable entry**	**Coded magnetic switch or coded magnetic system, pre-cabled or connector**
					Without locking	With locking, manual unlocking		

Metal	Metal or plastic	Plastic, double insulated	Plastic, double insulated		Metal	Metal	Plastic, double insulated	Plastic
–		–	–		–	–		
UL, CSA		UL, CSA	UL, CSA	UL, CSA, GOST	UL, CSA, GOST	UL, CSA, GOST		CЄ, UL, CSA, TÜV, GOST depending on model
30 x 50 x 16	34 x 65 x 34.5	Depending on type	30 x 78 x 15	30 x 93 x 30 52 x 114 x 30	40 x 60 x 44	98 x 146 x 44 110 x 93.5 x 33		Depending on type
Linear movement (plunger) or rotary movement (lever)		Rotary movement (lever)	Turret head		Turret head	Turret head		–
–		–	–	●	–	–		Depending on model
–		●	●		–	–	●	
–		–	–	●	–	–		
–		●	●		–	–	●	
●		●	–	●	–	–		
●		●	●		●	●	–	
–		–	–		–	–		
–		–	–		–	–		
●	–	–	–		–	–		
IP 66, IP 67 IP 68 (XCSM) IK 06 (XCSM & XCSD) IK 04 (XCSP)		IP 67	IP 67		IP 67	IP 67		IP 66, IP 67 IP 69K depending on model
- 25°C... + 70°C		- 25°C... + 70°C	- 25°C... + 70°C		- 25°C... + 70°C	- 25°C... + 70°C		- 25°C... + 70°C
XCSP and XCSD: 1 entry for Pg 13.5 or M20 cable gland or 1/2" NPT		Depending on model: 1 or 2 entries for Pg 13.5 or ISO M20 cable gland or 1/2" NPT	Depending on model: 1 or 2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT		1 entry for ISO M20 or Pg 13.5 cable gland or 1/2" NPT	Depending on model: 1 or 2 entries for Pg 13.5 or ISO M20 cable gland or 1/2" NPT		–
XCSM: Ø 7.5 cable, PvR		–	XCSMP: Ø 7.5 cable, PvR		–	–		PVC cable
–		–	–		–	–		Remote M8, remote M12 or integral M12 depending on model
XCSM	**XCSP XCSD**	**XCSPL, XCSPR XCSTL, XCSTR**	**XCSMP**	**XCSPA XCSTA**	**XCSA**	**XCSB XCSC**	**XCSE**	**XCSTE**	**XCSDM/C/P/R XCSDM3/4**
Please refer to our catalogue “Preventa XCS safety switches”									

Limit switches
OsiSense XC
Variable composition: **s**implicity through **i**nnovation

Principle

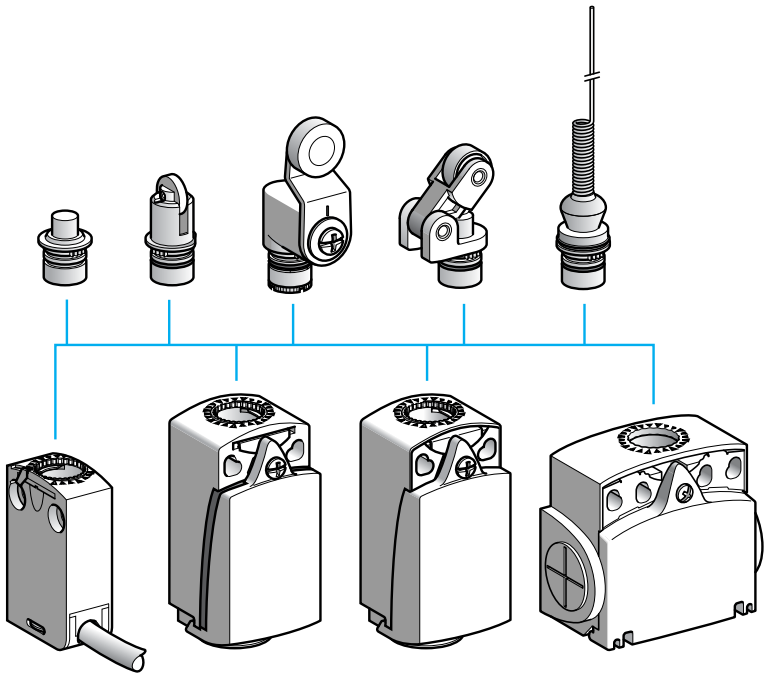
Variable composition principle

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

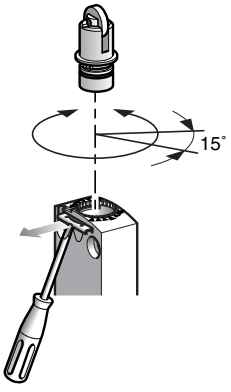
■ A worldwide detection first for improving productivity.
A complete offer for resolving the most commonly encountered detection problems:
□ product selection simplified,
□ product availability simplified,
□ installation and setting-up simplified,
□ maintenance simplified.

Heads

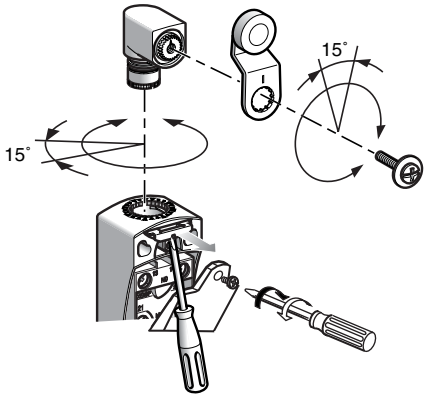
■ A single metal operating head type for the Miniature design XCMD and Compact design XCKD, XCKP and XCKT ranges.



■ Interchanging of heads achieved by simple operation of forked metal latch.
■ Adjustable in 3 planes:



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



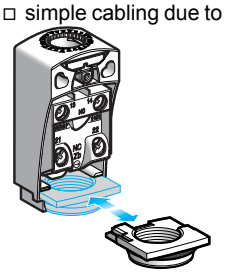
All the levers can be adjusted in 15° steps throughout 360°, in relation to the horizontal axis of the head.

Limit switches
OsiSense XC
Variable composition: **s**implicity through **i**nnovation

Principle (continued)

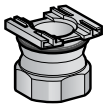
Cable entries

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



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

□ ISO M16 x 1.5
□ Pg 11

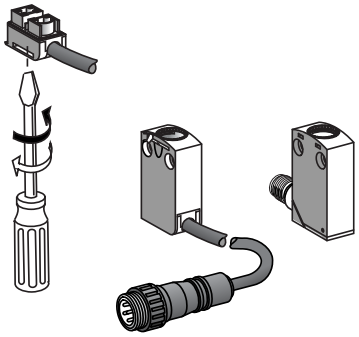


□ ISO M20 x 1.5
□ Pg 13.5
□ 1/2" NPT
□ PF 1/2 (G 1/2)

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

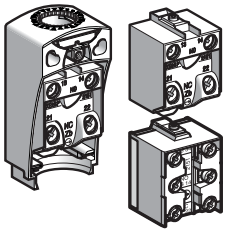
Connection components

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

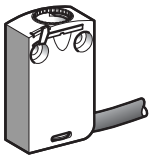


■ The miniature XCMD range also includes an integral or remote connector solution.

Contact block or bodies with contact



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

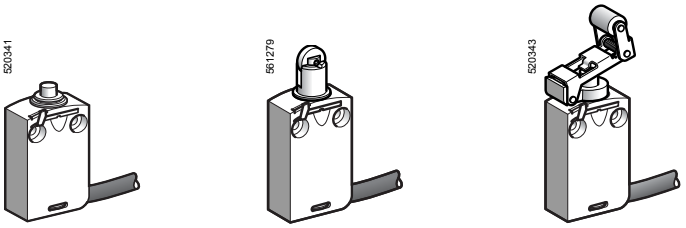


■ For the Miniature design XCMD range, the contacts are an integral part of the body:
□ 2 and 3 snap action and slow break contacts, with positive opening operation, and interchangeable connection component,
□ 4 snap action contacts, with positive opening operation, with monolithic body and connection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

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD

■ XCMD
pre-cabled

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



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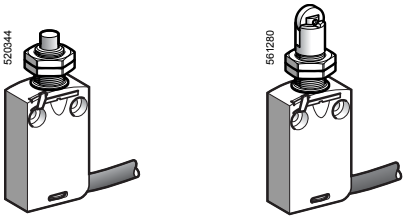
□ With head for linear movement (plunger). Fixing by the head



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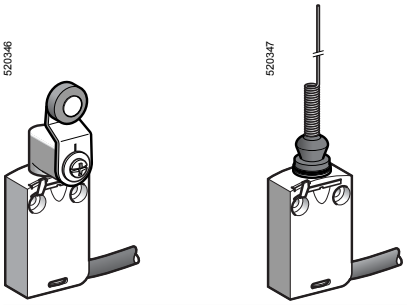
□ With head for rotary movement (lever) or multi-directional. Fixing by the body



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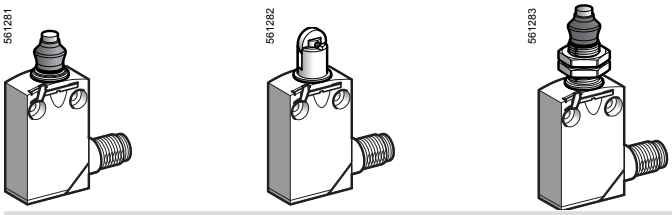
■ XCMD
with connector

□ With head for linear movement (plunger)

Fixing by the body | **Fixing by the head**



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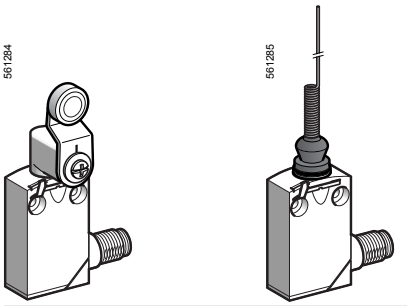
□ With head for rotary movement (lever) or multi-directional. Fixing by the body



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Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD

Environment characteristics

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

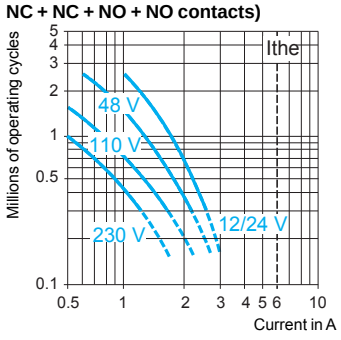
(1) Protection against prolonged immersion: the test conditions are subject to agreement between the manufacturer and the user.

Contact block characteristics

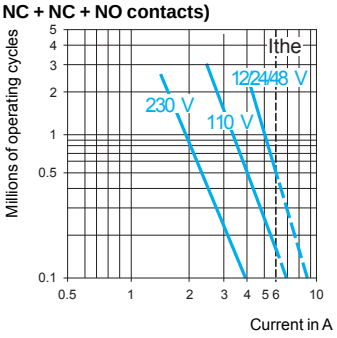
Rated operational characteristics	Switches with 2 contacts	**~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A)** **⎓ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1**
	Switches with 3 and 4 contacts	**~ AC-15; C300 (Ue = 240 V, Ie = 0.75 A)** **⎓ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1**
	Pre-cabled switches	**Ithe = 6 A for 2 contacts, 4 A for 3 contacts, 3 A for 4 contacts**
	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		■ 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

AC supply
50/60 Hz ~
⎓ 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 ⎓

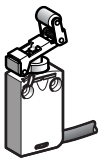
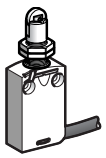
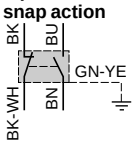
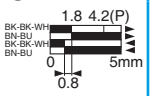
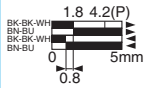
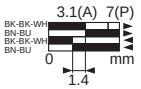
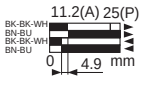
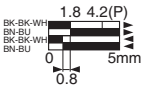
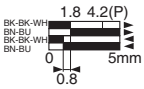
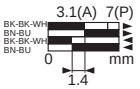
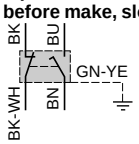
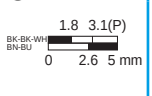
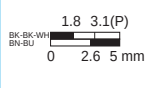
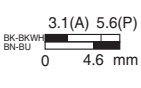
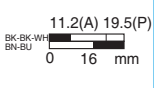
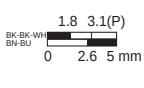
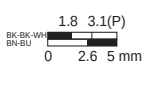
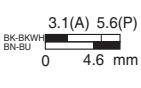
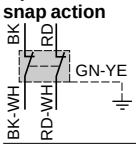
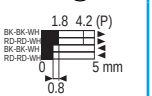
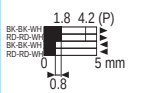
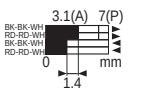
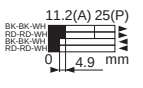
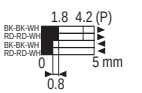
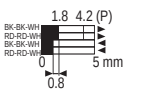
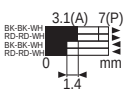
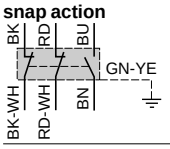
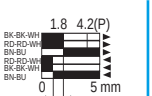
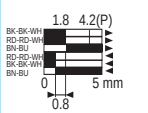
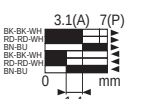
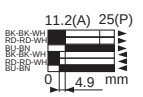
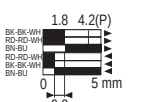
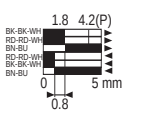
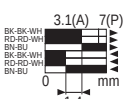
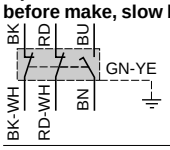
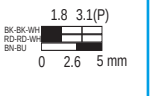
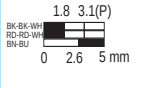
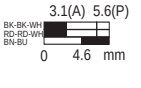
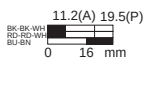
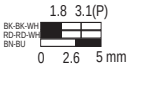
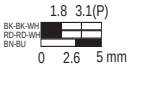
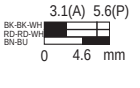
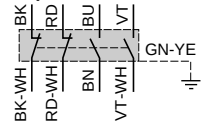
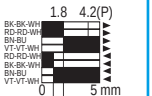
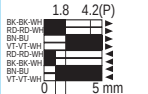
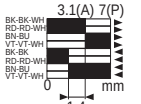
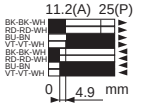
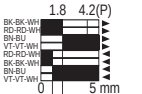
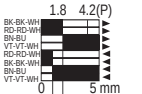
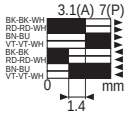
Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
⎓	W	3	2	1

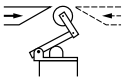
Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
⎓	W	4	3	3

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

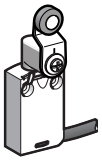
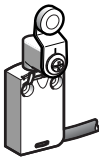
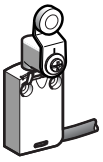
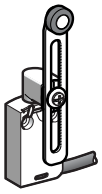
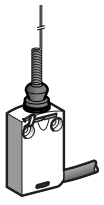
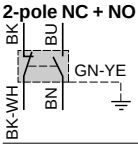
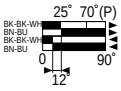
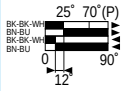
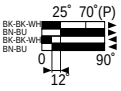
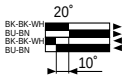
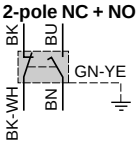
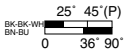
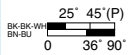
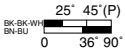
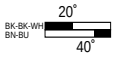
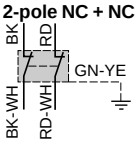
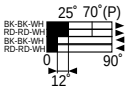
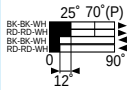
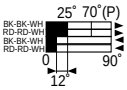
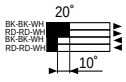
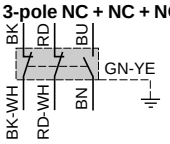
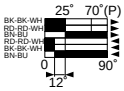
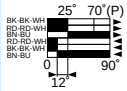
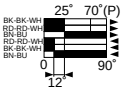
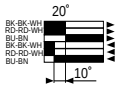
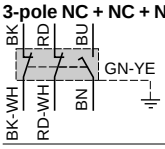
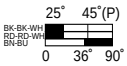
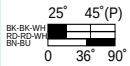
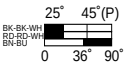
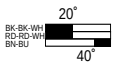
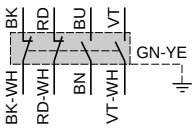
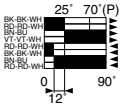
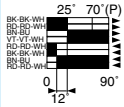
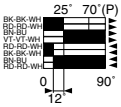
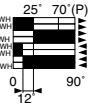
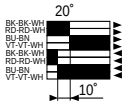
Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
							
Type of operator	Metal end plunger	Metal end plunger with elastomer boot *(1)*	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot *(1)*	M12 with steel roller plunger
References							
2-pole NC + NO snap action 	**XCMD2110L1** 	**XCMD2111L1** 	**XCMD2102L1** 	**XCMD2124L1** 	**XCMD21F0L1** 	**XCMD21G1L1** 	**XCMD21F2L1** 
2-pole NC + NO break before make, slow break 	**XCMD2510L1** 	**XCMD2511L1** 	**XCMD2502L1** 	**XCMD2524L1** 	**XCMD25F0L1** 	**XCMD25G1L1** 	**XCMD25F2L1** 
2-pole NC + NC snap action 	**ZCMD29L1 + ZCE10** 	**ZCMD29L1 + ZCE11** 	**ZCMD29L1 + ZCE02** 	**ZCMD29L1 + ZCE24** 	**ZCMD29L1 + ZCEF0** 	**ZCMD29L1 + ZCEG1** 	**ZCMD29L1 + ZCEF2** 
3-pole NC + NC + NO snap action 	**ZCMD39L1 + ZCE10** 	**ZCMD39L1 + ZCE11** 	**ZCMD39L1 + ZCE02** 	**ZCMD39L1 + ZCE24** 	**ZCMD39L1 + ZCEF0** 	**ZCMD39L1 + ZCEG1** 	**ZCMD39L1 + ZCEF2** 
3-pole NC + NC + NO break before make, slow break 	**ZCMD37L1 + ZCE10** 	**ZCMD37L1 + ZCE11** 	**ZCMD37L1 + ZCE02** 	**ZCMD37L1 + ZCE24** 	**ZCMD37L1 + ZCEF0** 	**ZCMD37L1 + ZCEG1** 	**ZCMD37L1 + ZCEF2** 
Weight (kg)	0.180	0.180	0.185	0.200	0.195	0.220	0.205
4-pole NC + NC + NO + NO snap action 	**ZCMD41L1 + ZCE10** 	**ZCMD41L1 + ZCE11** 	**ZCMD41L1 + ZCE02** 	**ZCMD41L1 + ZCE24** 	**ZCMD41L1 + ZCEF0** 	**ZCMD41L1 + ZCEG1** 	**ZCMD41L1 + ZCEF2** 
Weight (kg)	0.160	0.160	0.165	0.180	0.175	0.200	0.185
Contact operation	■ *closed* □ *open*		*(A) = cam displacement* *(P) = positive opening point*		⊖ *NC contact with positive opening operation*		

Characteristics

Switch actuation	On end	By 30° cam		On end	By 30° cam	
Type of actuation						
Maximum actuation speed	0.5 m/s				0.1m/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	
Minimum force or torque — For positive opening	42.5 N	35 N	12.5 N	42.5 N	35 N	
Cabling	PvR cable, 5 x 0.75 mm² , length 1 metre for 2-pole contact versions, 7 x 0.5 mm², length 1 metre for 3-pole contact versions, 9 x 0.34 mm², length 1 metre for 4-pole contact versions. For other lengths see page 24.					

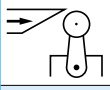
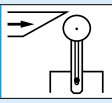
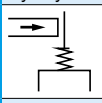
(1) Nitrile for indoor use.

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
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					
2-pole NC + NO snap action 	**XCMD2115L1** 	**XCMD2116L1** 	**XCMD2117L1** 	**XCMD2145L1** 	**XCMD2106L1** 
2-pole NC + NO break before make, slow break 	**XCMD2515L1** 	**XCMD2516L1** 	**XCMD2517L1** 	**XCMD2545L1** 	**XCMD2506L1** 
2-pole NC + NC snap action 	**ZCMD29L1 + ZCE01 + ZCY15** 	**ZCMD29L1 + ZCE01 + ZCY16** 	**ZCMD29L1 + ZCE01 + ZCY17** 	**ZCMD29L1 + ZCE01 + ZCY45** 	**ZCMD29L1 + ZCE06** 
3-pole NC + NC + NO snap action 	**ZCMD39L1 + ZCE01 + ZCY15** 	**ZCMD39L1 + ZCE01 + ZCY16** 	**ZCMD39L1 + ZCE01 + ZCY17** 	**ZCMD39L1 + ZCE01 + ZCY45** 	**ZCMD39L1 + ZCE06** 
3-pole NC + NC + N/O break before make, slow break 	**ZCMD37L1 + ZCE01 + ZCY15** 	**ZCMD37L1 + ZCE01 + ZCY16** 	**ZCMD37L1 + ZCE01 + ZCY17** 	**ZCMD37L1 + ZCE01 + ZCY45** 	**ZCMD37L1 + ZCE06** 
Weight (kg)	0.220	0.225	0.220	0.230	0.180
4-pole NC + NC + NO + NO snap action 	**ZCMD41L1 + ZCE01 + ZCY15** 	**ZCMD41L1 + ZCE01 + ZCY16** 	**ZCMD41L1 + ZCE01 + ZCY17** 	**ZCMD41L1 + ZCE01 + ZCY45** 	**ZCMD41L1 + 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*	

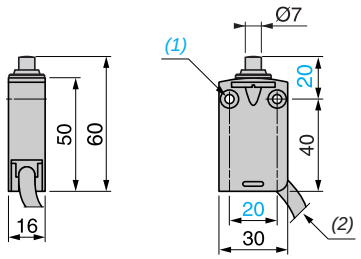
(1) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics

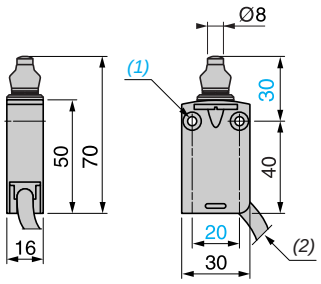
Switch actuation		By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed		1.5 m/s			1 m/s
Mechanical durability		10 million operating cycles			5
Minimum force or torque	For tripping	0.1 N.m			
	For positive opening	0.5 N.m			–
Cabling		PvR cable, 5 x 0.75 mm², length 1 metre for 2-pole contact versions, 7 x 0.5 mm², length 1 metre for 3-pole contact versions, 9 x 0.34 mm², length 1 metre for 4-pole contact versions. For other lengths see page 24.			

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

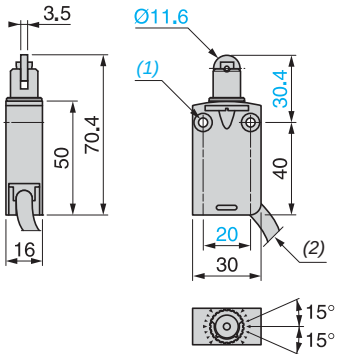
XCMD2●10L1



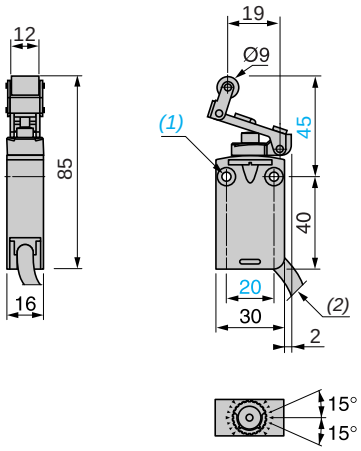
XCMD2●11L1



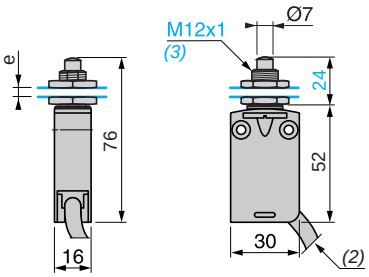
XCMD2●02L1



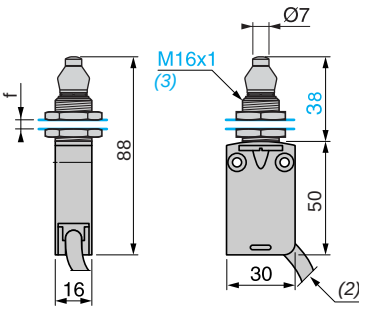
XCMD2●24L1



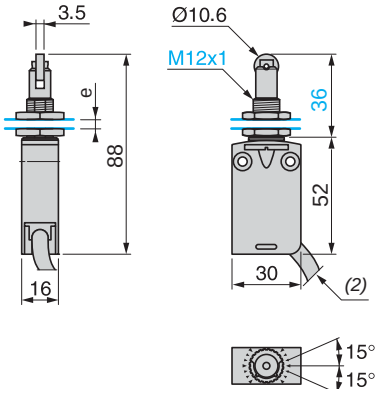
XCMD2●F0L1



XCMD2●G1L1



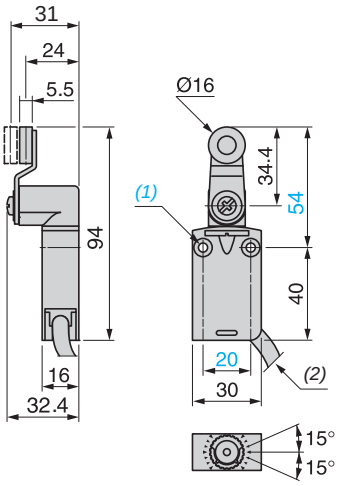
XCMD2●F2L1



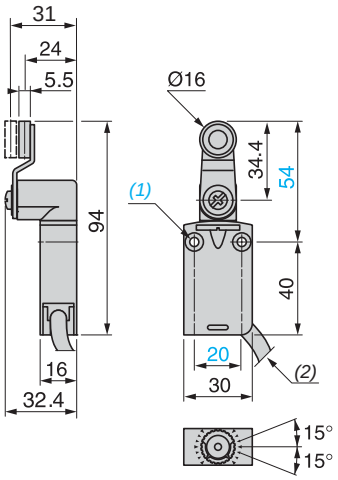
(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
(2) External diameter of cable 7.5 mm.
(3) Fixing nut thickness 3.5 mm.
e: 8 mm max, panel cut-out Ø 12.5 mm.
f: 8 mm max, panel cut-out Ø 16.5 mm.

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

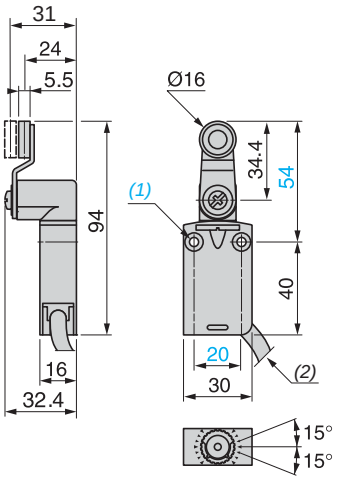
XCMD2●15L1



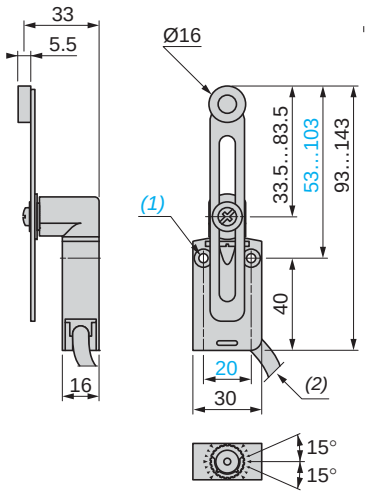
XCMD2●16L1



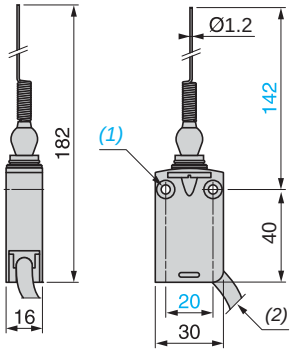
XCMD2●17L1



XCMD2●45L1

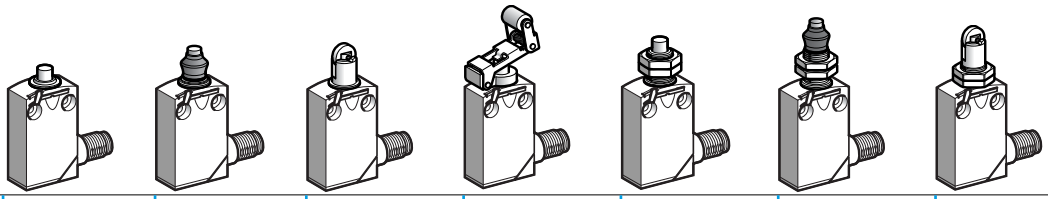
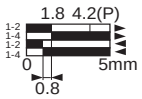
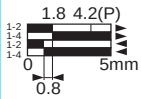
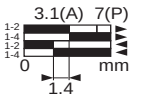
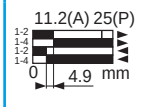
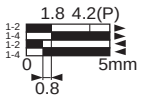
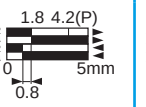
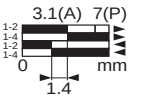
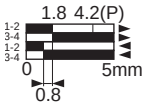
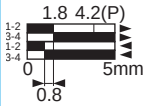
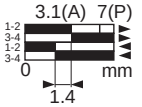
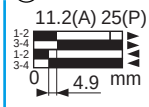
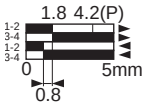
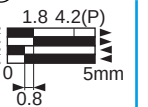
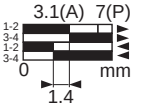
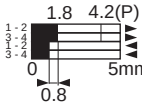
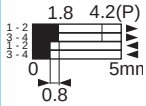
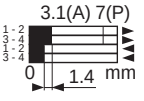
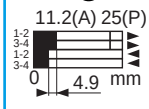
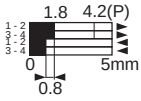
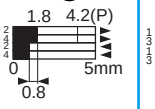
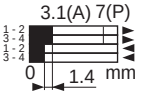
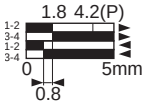
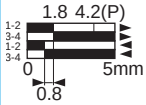
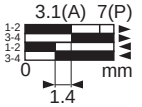
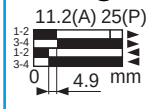
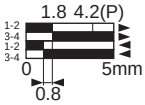
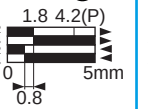
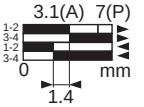
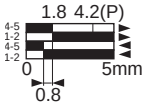
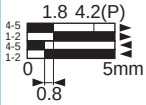
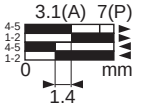
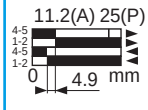
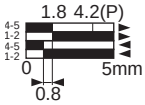
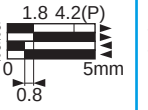
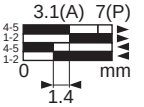


XCMD2●06L1

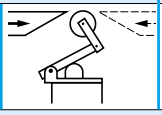


(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
(2) External diameter of cable 7.5 mm.
e: 8 mm max, panel cut-out Ø 12.5 mm.
f: 8 mm max, panel cut-out Ø 16.5 mm.

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Connector

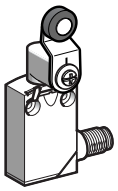
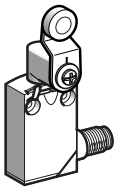
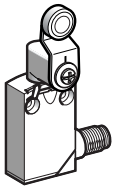
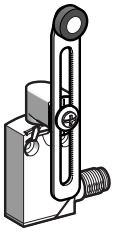
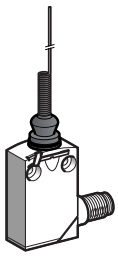
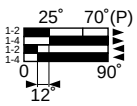
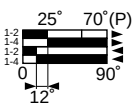
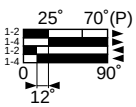
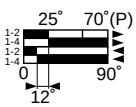
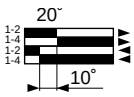
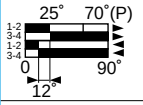
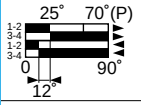
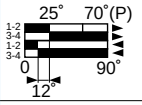
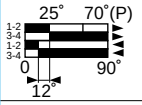
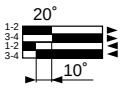
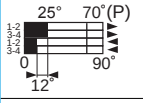
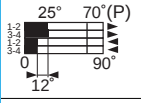
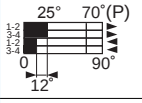
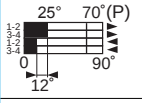
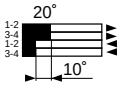
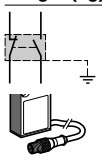
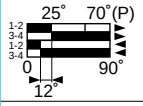
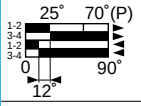
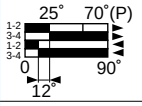
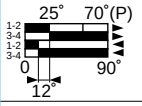
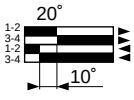
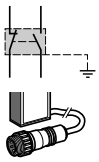
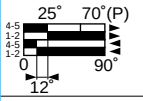
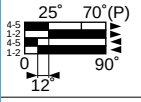
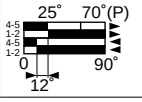
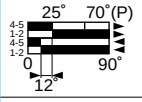
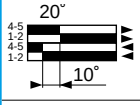
Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
							
Type of operator	Metal end plunger	Metal end plunger with elastomer boot *(1)*	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot *(1)*	M12 with steel roller plunger
References							
Single-pole CO snap action + integral M12 4-pin connector	**XCMD2110M12** 	**XCMD2111M12** 	**XCMD2102M12** 	**XCMD2124M12** 	**XCMD21F0M12** 	**XCMD21G1M12** 	**XCMD21F2M12** 
2-pole NC + NO snap action + integral M12 5-pin connector	**XCMD2110C12** 	**XCMD2111C12** 	**XCMD2102C12** 	**XCMD2124C12** 	**XCMD21F0C12** 	**XCMD21G1C12** 	**XCMD21F2C12** 
2-pole NC + NC snap action + integral M12 5-pin connector	**ZCMD29C12 + ZCE10** 	**ZCMD29C12 + ZCE11** 	**ZCMD29C12 + ZCE02** 	**ZCMD29C12 + ZCE24** 	**ZCMD29C12 + ZCEF0** 	**ZCMD29C12 + ZCEG1** 	**ZCMD29C12 + ZCEF2** 
Weight (kg)	0.085	0.085	0.090	0.105	0.100	0.125	0.110
2-pole NC + NO snap action + M12 5-pin connector on 0.8 m flying lead	**ZCMD21L08R12 + ZCE10** 	**ZCMD21L08R12 + ZCE11** 	**ZCMD21L08R12 + ZCE02** 	**ZCMD21L08R12 + ZCE24** 	**ZCMD21L08R12 + ZCEF0** 	**ZCMD21L08R12 + ZCEG1** 	**ZCMD21L08R12 + ZCEF2** 
2-pole NC + NO snap action + 7/8"-16UN 5-pin connector on 0 8 m flying lead	**ZCMD21L08U78 + ZCE10** 	**ZCMD21L08U78 + ZCE11** 	**ZCMD21L08U78 + ZCE02** 	**ZCMD21L08U78 + ZCE24** 	**ZCMD21L08U78 + ZCEF0** 	**ZCMD21L08U78 + ZCEG1** 	**ZCMD21L08U78 + ZCEF2** 
Weight (kg)	0.150	0.150	0.155	0.170	0.165	0.190	0.175
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		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	
Minimum force or torque 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.					

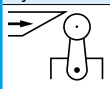
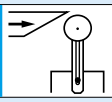
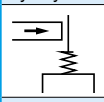
(1) Nitrile for indoor use.

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD 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**	**XCMD2115M12** 	**XCMD2116M12** 	**XCMD2117M12** 	**XCMD2145M12** 	**XCMD2106M12** 
 **2-pole NC + NO snap action With integral M12, 5-pin connector**	**XCMD2115C12** ⊖ 	**XCMD2116C12** ⊖ 	**XCMD2117C12** ⊖ 	**XCMD2145C12** ⊖ 	**XCMD2106C12** 
 **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"-16UN, 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*	

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

Characteristics

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.	

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Connector cabling accessories

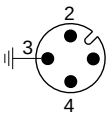
References of suitable pre-wired female connectors

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**	**XZCP1771L2**
	L = 5 m	**XZCP1169L5**	**XZCP1164L5**	**XZCP1264L5**	**XZCP1771L5**
	L = 10 m	**XZCP1169L10**	**XZCP1164L10**	**XZCP1264L10**	**XZCP1771L10**
Weight (kg)		0.105	0.115	0.115	0.190

Connections

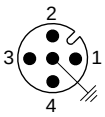
XCMD with connector

4-pin, M12



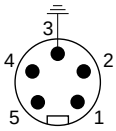
3 A - 250 V
1 = common
2 = NC
3 = ⏚
4 = NO

5-pin, M12



4 A - 60 V
XCMD21●● or **ZCMD21●●**
1 - 2 = NC
3 - 4 = NO
5 = ⏚
XCMD29●● or **ZCMD29●●**
1 - 2 = NC
3 - 4 = NC
5 = ⏚

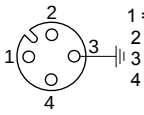
5-pin, 7/8"-16UN



6 A - 250 V
1 - 2 = NC
4 - 5 = NO
3 = ⏚

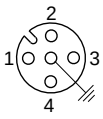
Pre-wired female connectors XZCP

4-pin, M12



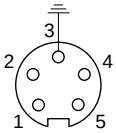
1 = brown
2 = blue
3 = yellow/green ⏚
4 = black

5-pin, M12



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

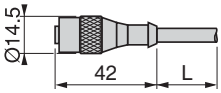
5-pin, 7/8"-16UN



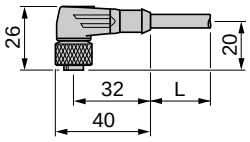
1 = black
2 = blue
3 = yellow/green ⏚
4 = brown
5 = white

Dimensions

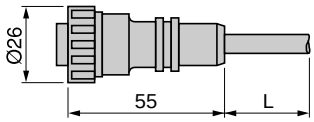
XZCP116●L●



XZCP1264L●



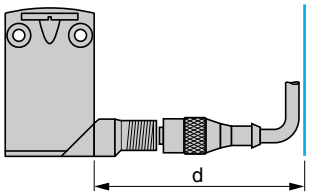
XZCP1771L●



L: *cable length 2, 5 or 10 m.*

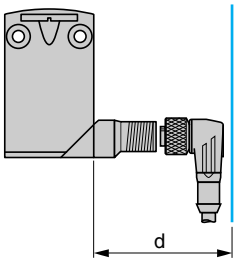
Distances required for plug-in connectors

M12 straight connector



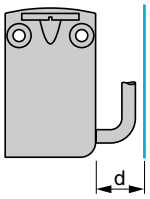
d: *min. 65 mm, recommended 69 mm*

M12 elbowed connector



d: *min. 42 mm, recommended 45 mm*

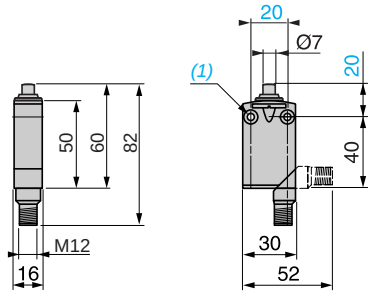
Connector on flying lead



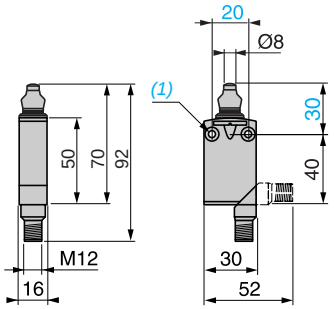
d: *min. 20 mm*

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Connector

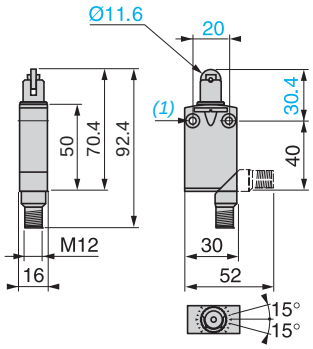
XCMD2●10M12



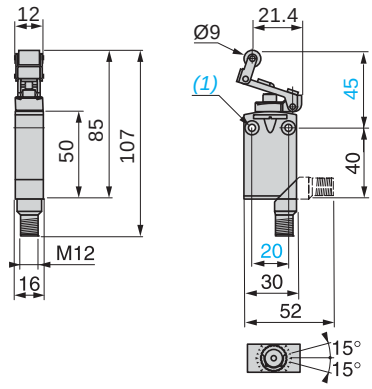
XCMD2●11M12



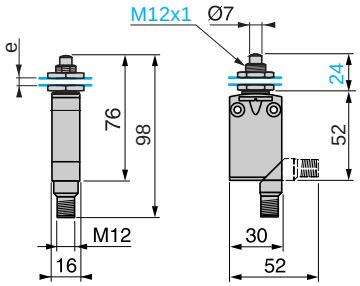
XCMD2●02M12



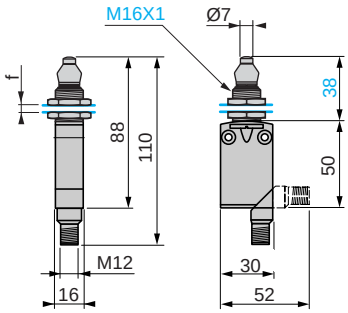
XCMD2●24M12



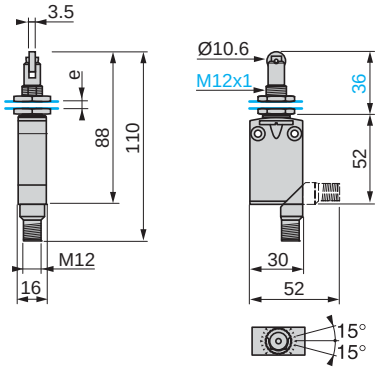
XCMD2●F0M12



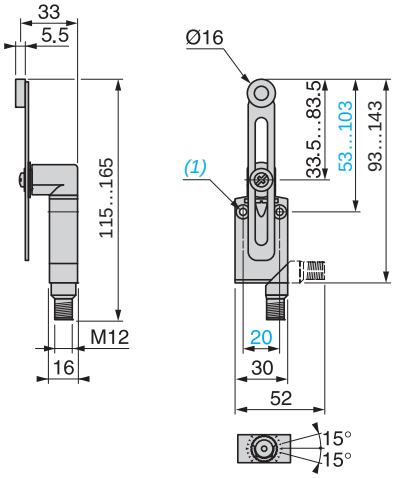
XCMD2●G1M12



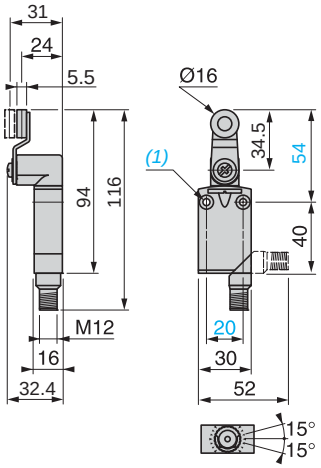
XCMD2●F2M12



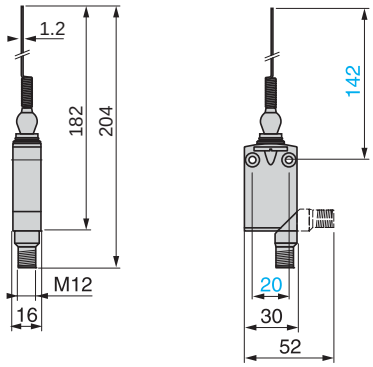
XCMD2●45M12



XCMD2●15M12/●16M12/●17M12

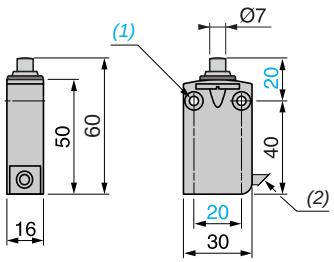


XCMD2●06M12

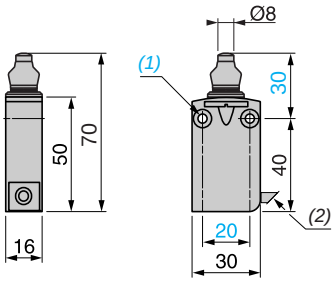


(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.
f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

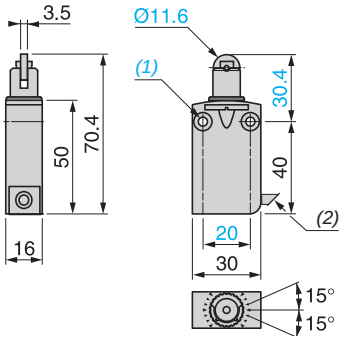
ZCMD21L08●●● + ZCE10



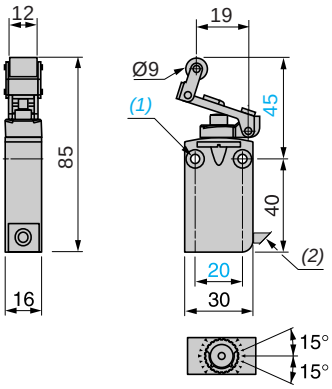
ZCMD21L08●●● + ZCE11



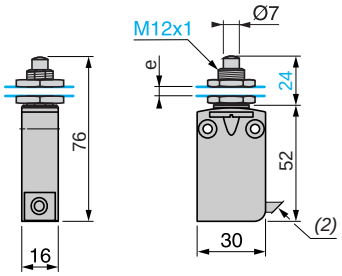
ZCMD21L08●●● + ZCE02



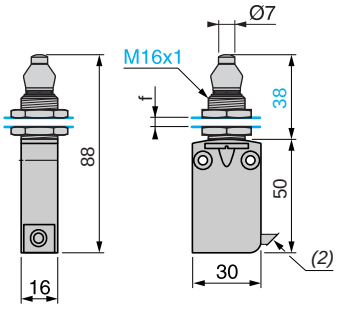
ZCMD21L08●●● + ZCE24



ZCMD21L08●●● + ZCEF0

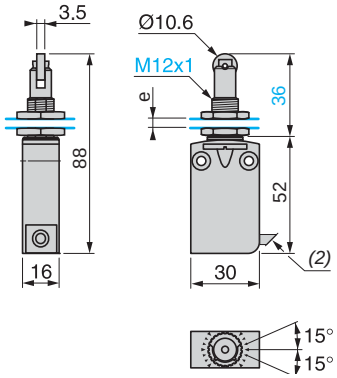


ZCMD21L08●●● + ZCEG1

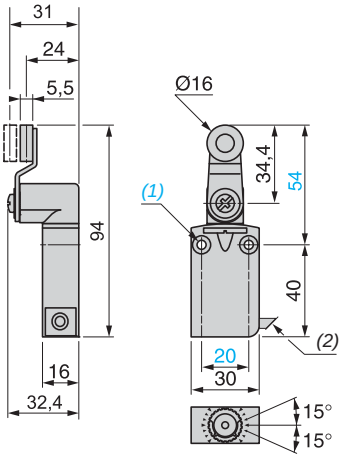


(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
(2) External diameter 7.5 mm.
e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.
f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

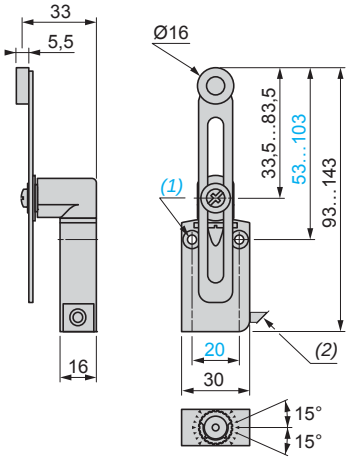
ZCMD21L08●●● + ZCEF2



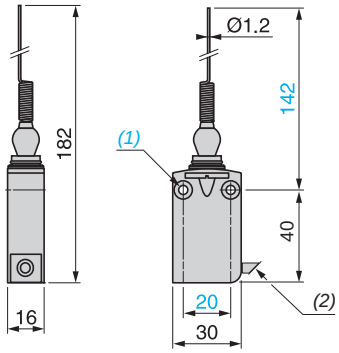
ZCMD21L08●●● + ZCE01 + ZCY15/16/17



ZCMD21L08●●● + ZCE01 + ZCY45

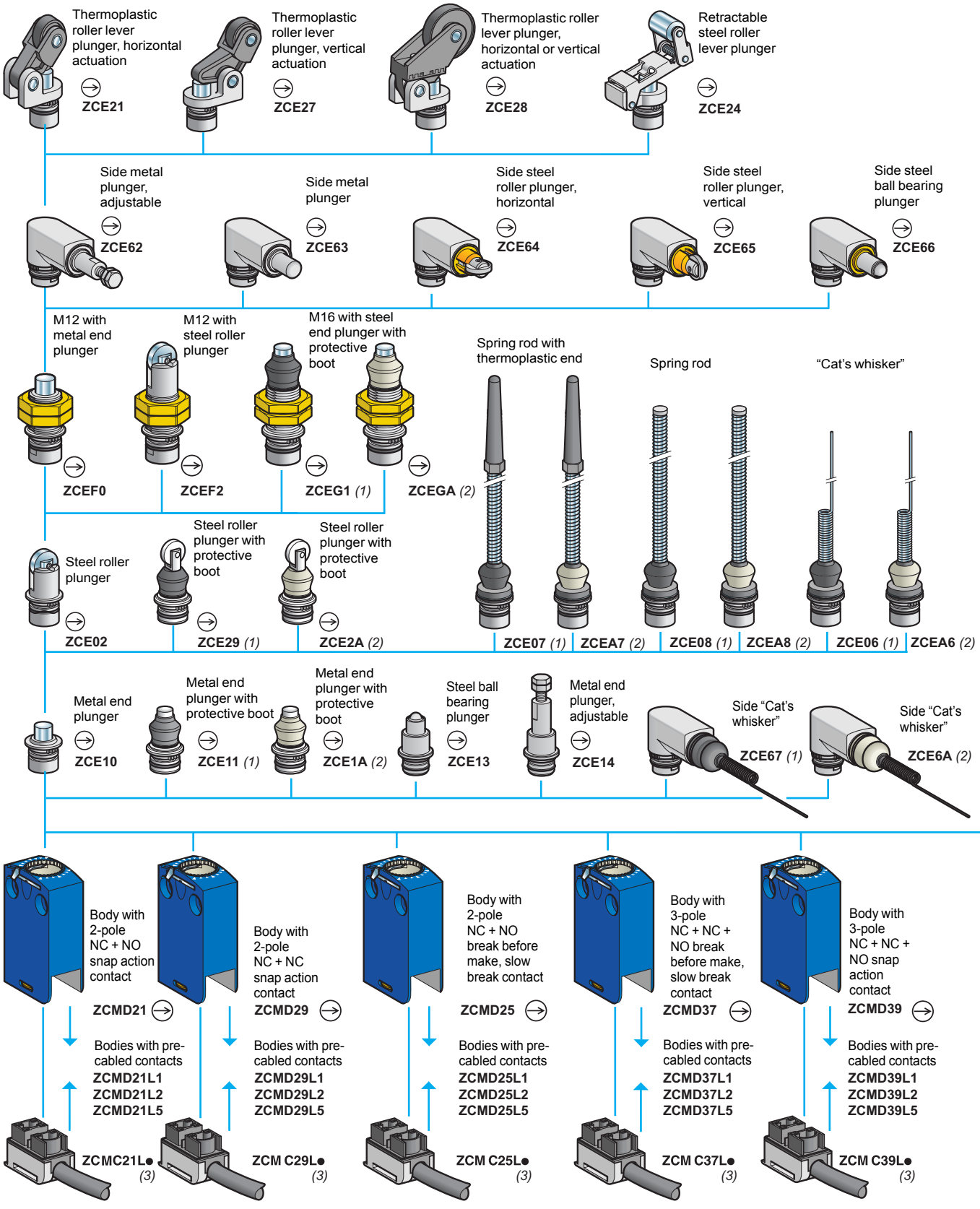


ZCMD21L08●●● + ZCE06



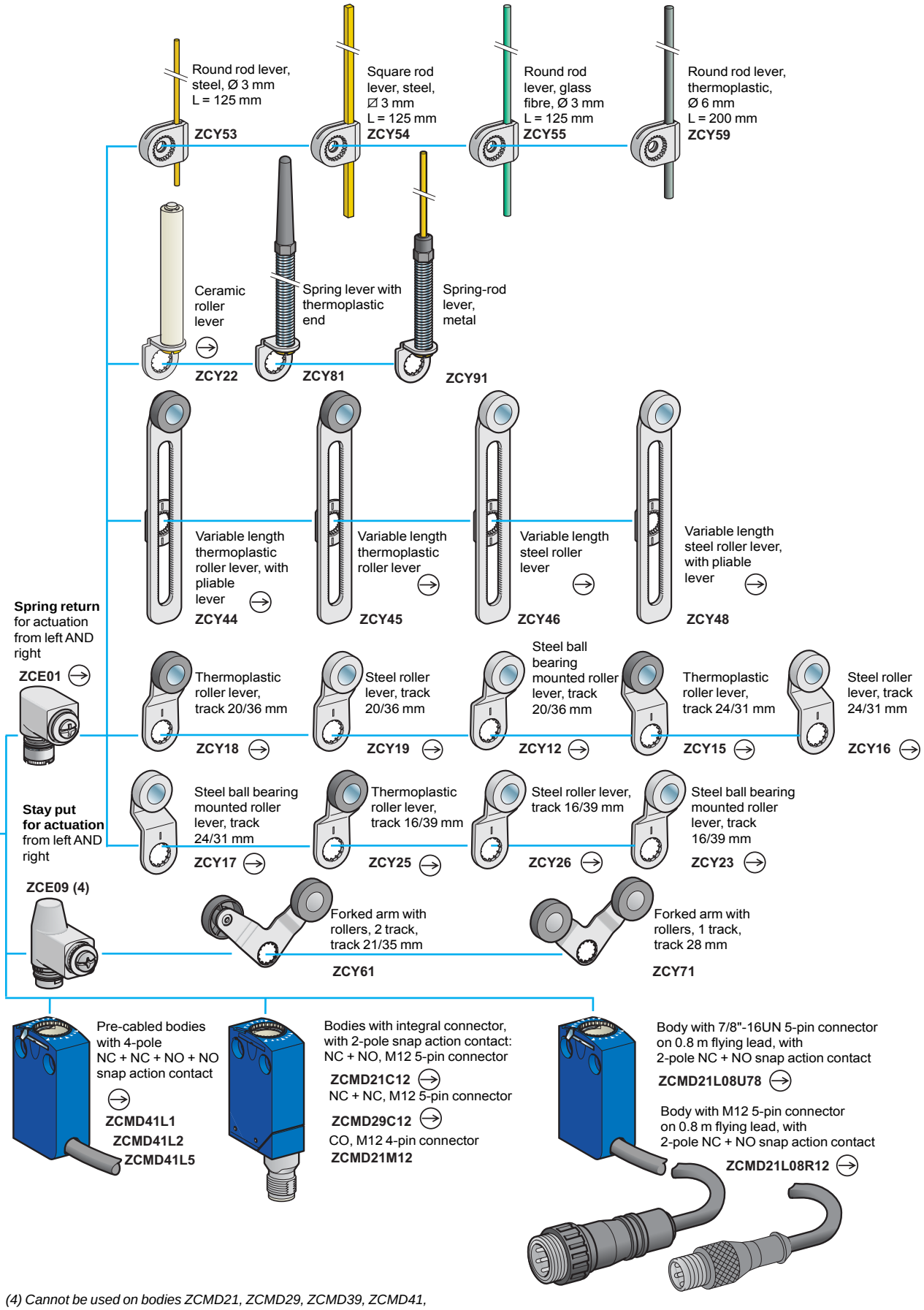
(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
(2) External diameter 7.5 mm.
e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.
f: 8 mm max, panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Variable composition



(1) Nitrile boot for indoor use.
(2) Silicone boot for outdoor use.
(3) Pre-cabled connection components: replace the "●" in the reference by the required cable length in metres, either: 1, 2, 3, 5, 7 or 10.
Example: ZCMC21L● becomes ZCMC21L7 for a 7 metre long cable.
Note: Only cable lengths of 1, 2 and 5 metres are available for pre-cabled connection components ZCMC37L● and ZCM39L●

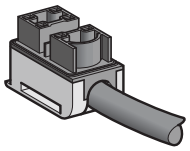
Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Variable composition



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

Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Separate components

520719

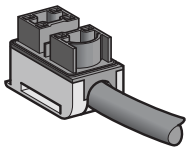


ZCMC21E●

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**	0.440
		7	**ZCMC21E7**	0.700
		10	**ZCMC21E10**	0.970

520719

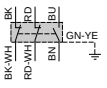
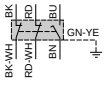
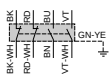


ZCMC25T06
ZCMC21T●

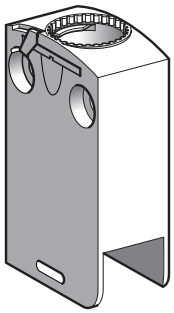
Pre-cabled connection components with halogen free cable

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
NC + NO snap action	⊖		1	**ZCMC21T1**	0.130
			2	**ZCMC21T2**	0.250
			5	**ZCMC21T5**	0.520

Bodies with gold contacts

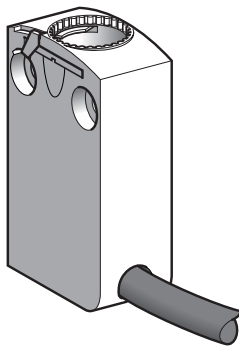
Type of contact	Positive operation *(3)*	Scheme	Length of cable in metres	Reference	Weight kg
2-pole					
NC + NO snap action	⊖		–	**ZCMD61**	0.055
NC + NC snap action	⊖		–	**ZCMD69**	0.055
NC + NO break before make, slow break	⊖		–	**ZCMD65**	0.055
3-pole					
NC + NC + NO snap action	⊖		–	**ZCMD79**	0.055
NC + NC + NO break before make, slow break	⊖		–	**ZCMD77**	0.055
4-pole					
NC + NC + NO + NO snap action	⊖		1	**ZCMD81L1**	0.160
			2	**ZCMD81L2**	0.255
			5	**ZCMD81L5**	0.525

520720



ZCMD6●
ZCMD7●

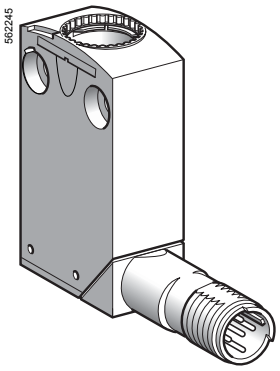
520721



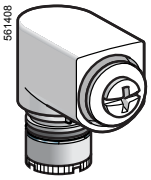
ZCMD81L●

(1) Cable not UL, CSA certified.
(2) Other types of contacts and cable possible. Please consult our Customer Care Centre.
(3) ⊖ bodies with contacts assuring positive opening operation.

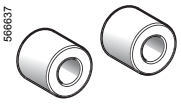
Limit switches
OsiSense XC Standard
Miniature design, metal, type XCMD
Separate components



ZCMD61●●●

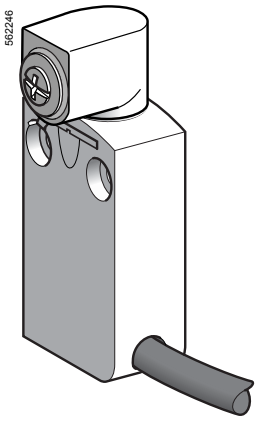


ZCE05

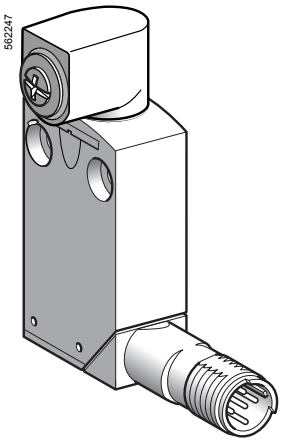


XCMZ06

XCMZ07



XCMD2●01L1



XCMD2101●12

Bodies with gold contacts, connector

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
2-pole					
NC + NO snap action	–		M12, 5-pin	**ZCMD61C12**	0.065
NC + NC snap action	–		M12, 5-pin	**ZCMD69C12**	0.065
Single-pole					
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 left AND right or from left OR right *(2)*	⊖	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

Bodies with contacts, with rotary head (without operating lever), pre-cabled

Type of contact	Positive operation (1)	Scheme	Length of cable in metres	Reference	Weight kg
2-pole					
NC + NO snap action	⊖	BK, BU, GN-YE, BK-WH, BN	1	**XCMD2101L1**	0.180
NC + NO break before make, slow break	⊖	BK, BU, GN-YE, BK-WH, BN	1	**XCMD2501L1**	0.180

Bodies with contacts, with rotary head (without operating lever), connector

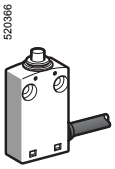
Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
2-pole					
NC + NO snap action	⊖		M12, 5-pin	**XCMD2101C12**	0.110
Single-pole					
CO snap action	–		M12, 4-pin	**XCMD2101M12**	0.110

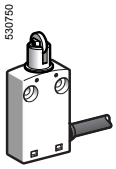
(1) ⊖ bodies with contacts or head assuring positive opening operation.
(2) For programming see page 128.

Limit switches
OsiSense XC Basic
Miniature design, plastic, type XCMN

■ XCMN
pre-cabled

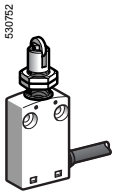
□ With head for linear movement (plunger). Fixing by the body





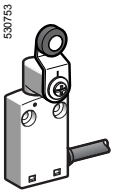
Page 28

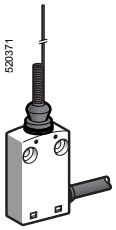
□ With head for linear movement (plunger). Fixing by the head



Page 28

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





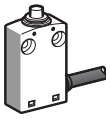
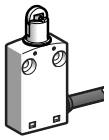
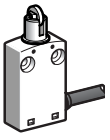
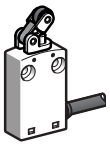
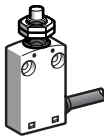
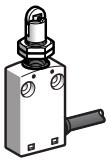
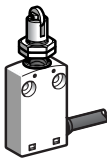
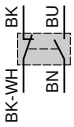
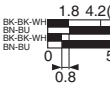
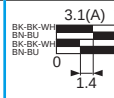
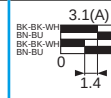
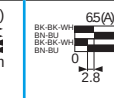
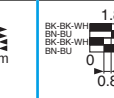
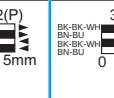
Page 29

Limit switches
OsiSense XC Basic
Miniature design, plastic, type XCMN

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	5 gn (10…500 Hz)
Shock resistance	Conforming to IEC 60068-2-27	25 gn (18 ms)
Electric shock protection		Class II conforming to IEC 61140 and NF C 20030
Degree of protection		**IP 65 conforming to IEC 60529; IK 04 conforming to EN 50102**
Materials	Bodies	Plastic
	Heads	Zamak

Contact block characteristics	
Rated operational characteristics	~ 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	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	U imp = 4 kV conforming to IEC 60947-1, IEC 60664
Short-circuit protection	6 A cartridge fuse type gG (gI)

Limit switches
OsiSense XC Basic
Miniature design, plastic, type XCMN
Pre-cabled

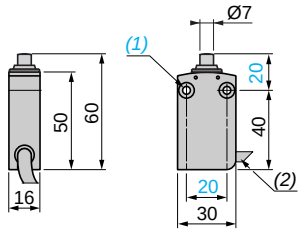
Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
							
Type of operator	Metal end plunger	Steel roller plunger for lateral cam approach	Steel roller plunger for traverse cam approach	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	M12 with metal end plunger	M12 with steel roller plunger for lateral cam approach	M12 with steel roller plunger for traverse cam approach
References							
2-pole NC + NO snap action	**XCMN2110L1**	**XCMN2102L1**	**XCMN2103L1**	**XCMN2121L1**	**XCMN21F0L1**	**XCMN21F2L1**	**XCMN21F3L1**
							
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

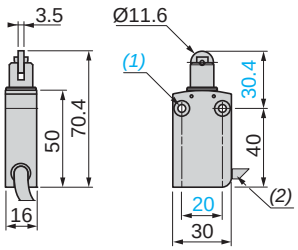
Switch actuation		On end	By 30° cam		On end	By 30° cam
Type of actuation						
Maximum actuation speed		0.5 m/s	0.1 m/s	0.5 m/s		0.1 m/s
Mechanical durability		5 million operating cycles				
Minimum force or torque	For tripping	8.5 N	7 N	2.5 N	8.5 N	7 N
	For positive opening	42.5 N	35 N	12.5 N	42.5 N	35 N
Cabling		PvR cable, 4 x 0.75 mm², length 1 metre				

Dimensions

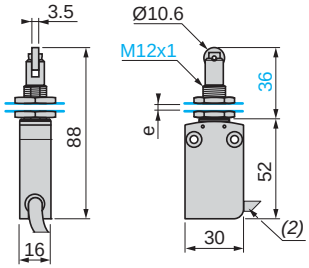
XCMN2110L1



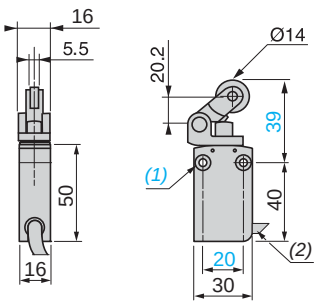
XCMN2102L1, XCMN2103L1



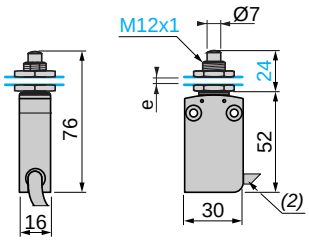
XCMN21F2L1, XCMN21F3L1



XCMN2121L1

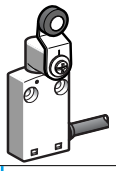
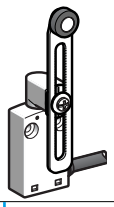
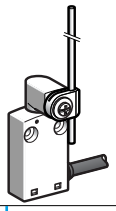
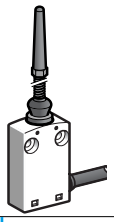
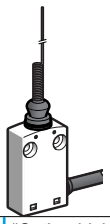


XCMN21F0L1

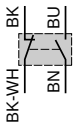
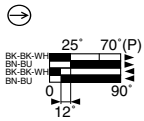
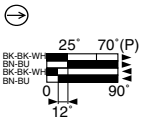
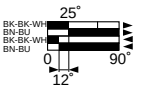
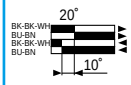
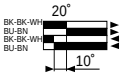


(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
(2) External diameter 7.5 mm.
e: 8 mm max, panel cut-out Ø 12.5 mm.
Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Basic
Miniature design, plastic, type XCMN
Pre-cabled

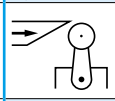
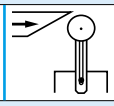
Type of head	Rotary (fixing by the body)			Multi-directional	
					
Type of operator	Thermoplastic roller lever	Variable length thermoplastic roller lever	Round thermoplastic rod lever, Ø 6 mm *(1)*	Spring lever with thermoplastic end *(1)*	"Cat's whisker" *(1)*

References

 **2-pole NC + NO snap action**	**XCMN2115L1** 	**XCMN2145L1** 	**XCMN2159L1** 	**XCMN2107L1** 	**XCMN2106L1** 
Weight (kg)	0.100	0.105	0.080	0.085	0.080
Contact operation	*closed* / *open*	*(A) = cam displacement* / *(P) = positive opening point*		*NC contact with positive opening operation*	

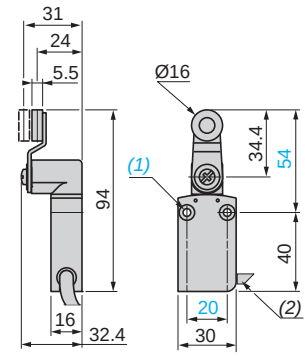
(1) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics

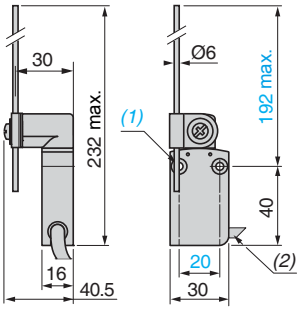
Switch actuation		By 30° cam		By any moving part	
Type of actuation					 
Maximum actuation speed		1.5 m/s		1 m/s	1 m/s (any direction)
Mechanical durability		5 million operating cycles			
Minimum force or torque	For tripping	0.1 N.m			
	For positive opening	0.5 N.m		–	– –
Cabling		PvR cable, 4 x 0.75 mm², length 1 metre			

Dimensions

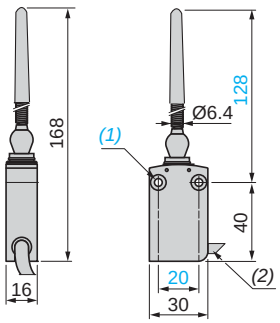
XCMN2115L1



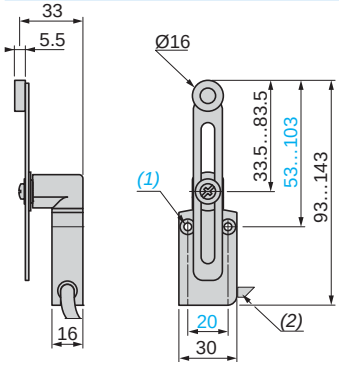
XCMN2159L1



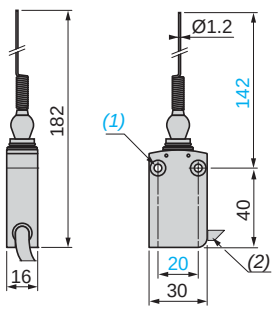
XCMN2107L1



XCMN2145L1



XCMN2106L1



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

Limit switches
OsiSense XC Standard
Compact design, plastic, types XCKP and XCKT
Compact design, metal, type XCKD

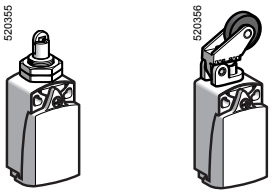
■ XCKP, XCKD
with 1 cable entry
Conforming to CENELEC EN 50047

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

XCKD

Pages 38 and 42

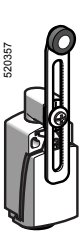
XCKP



Pages 32 and 36

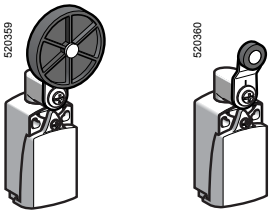
□ With head for rotary movement (lever) or multi-directional. Fixing by the body

XCKD



Pages 39 and 43

XCKP

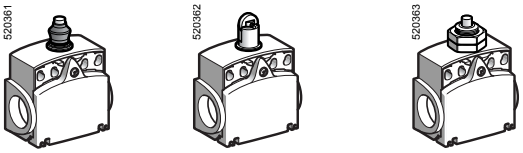


Pages 33 and 37

■ 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

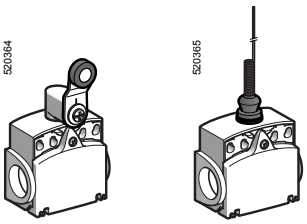
XCKT



Page 44

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

XCKT



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Environment characteristics

Conformity to standards	Products	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications		UL, CSA, 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 EN 50102 for XCKP and XCKT, IK 06 conforming to EN 50102 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

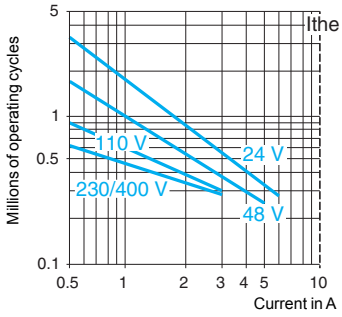
Limit switches
OsiSense XC Standard
Compact design, plastic, types XCKP and XCKT
Compact design, metal, type XCKD

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 mm², max: 2 x 1.5 mm²
	XE2NP21●1 and XE2NP31●1	Clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm²
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm², max: 1 x 1 mm² or 2 x 0.75 mm²
Minimum actuation speed (for head with end plunger)		**XE2SP●151**, **XE2SP2141** and **XE3SP**: 0.01 m/minute
		XE2NP21●1, **XE2NP31●1** and **XE3NP**: 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

XE2SP●151, XE2SP2141

AC supply
50/60 Hz ∼
⎓ inductive circuit

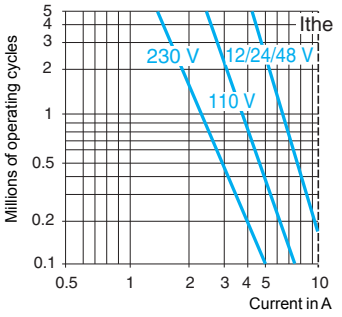


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	10	7	4

XE2NP21●1, XE2NP31●1



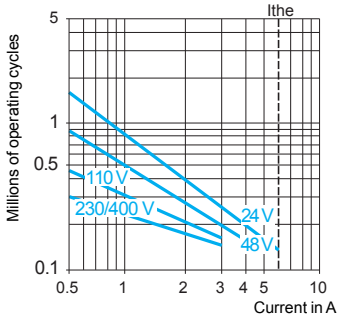
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	13	9	7

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

XE3SP●●●●

AC supply
50/60 Hz ∼
⎓ inductive circuit

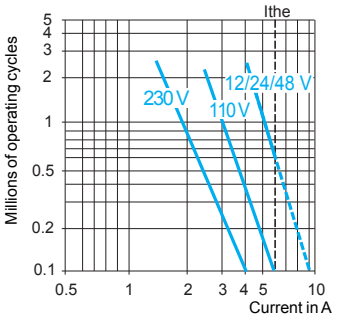


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	3	2	1

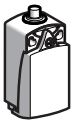
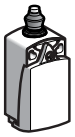
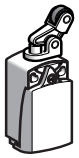
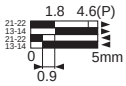
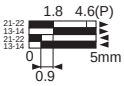
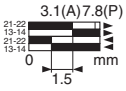
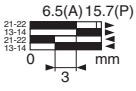
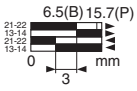
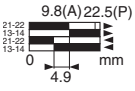
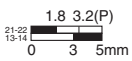
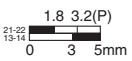
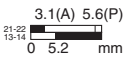
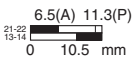
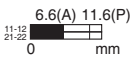
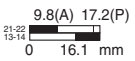
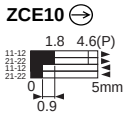
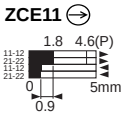
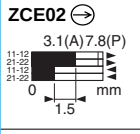
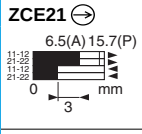
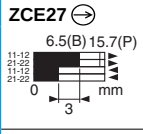
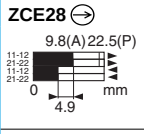
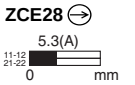
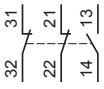
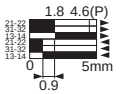
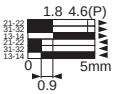
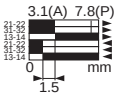
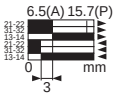
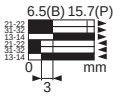
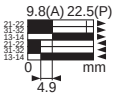
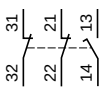
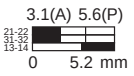
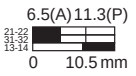
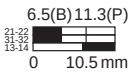
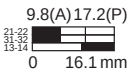
XE3NP●●●●



Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	4	3	2

Limit switches
OsiSense XC Standard
Compact design, plastic, type 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 ZCPEG11.

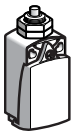
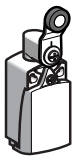
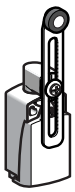
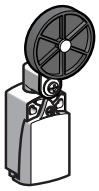
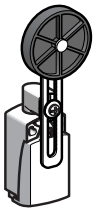
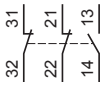
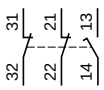
Contact operation ■ *closed* □ *open* — *(A) (B) = cam displacement* *(P) = positive opening point* — ⊖ *NC contact with positive opening operation*

Characteristics

Switch actuation	On end	By 30° cam			
Type of actuation					
Maximum actuation speed	0.5 m/s		1 m/s		
Mechanical durability (in millions of operating cycles)	15	10	15		
Minimum force or torque For tripping	15 N	12 N	6 N		
For positive opening	45 N	36 N	18 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 134.
(2) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Limit switches
OsiSense XC Standard
Compact design, plastic, type XCKP
Complete switches with 1 cable entry

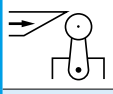
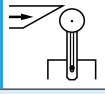
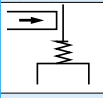
Type of head	Plunger (fixing by the head)		Rotary (fixing by the body)				Multi-directional
			Form A *(1)*				
							
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable 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* □ *open* — *(A) = cam displacement* — *(P) = positive opening point* — ⊖ *NC contact with positive opening operation*

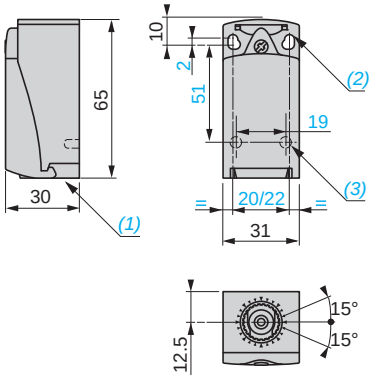
Characteristics

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				5 million
Minimum force or torque For tripping	15 N	10 N	0.1 N.m		0.13 N.m
Minimum force or torque For positive opening	45 N	36 N	0.25 N.m		–
Cable entry	1 entry tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm				

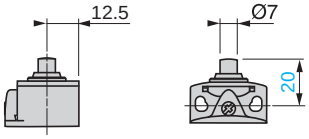
(1) Form conforming to EN 50047, see page 134.
(2) Value taken with actuation by moving part at 100 mm from the fixing.
(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Limit switches
OsiSense XC Standard
Compact design, plastic, type XCKP
Complete switches with 1 cable entry

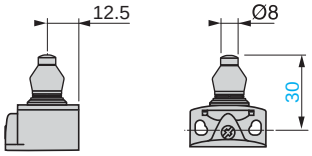
ZCP2● + ZCPEP16/ZCP3● + ZCPEP16



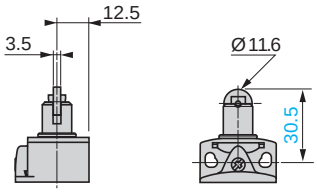
ZCE10



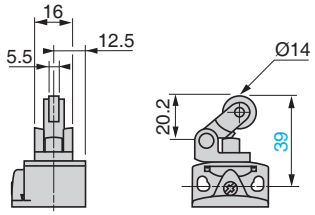
ZCE11



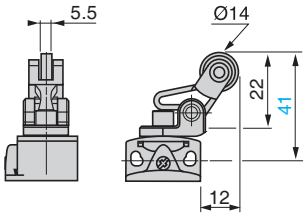
ZCE02



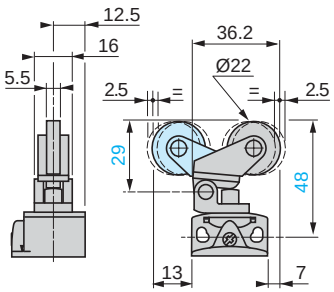
ZCE21



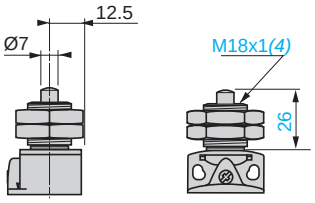
ZCE27



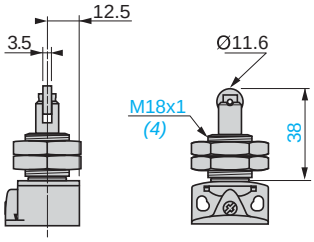
ZCE28



ZCEH0



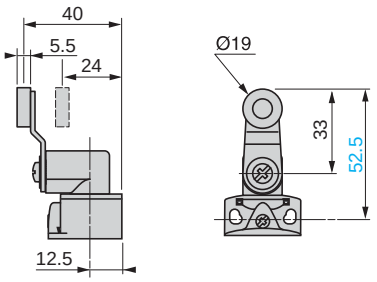
ZCEH2



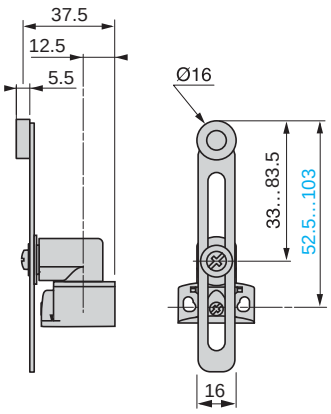
(1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland.
(2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.
(4) Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Compact design, plastic, type XCKP
Complete switches with 1 cable entry

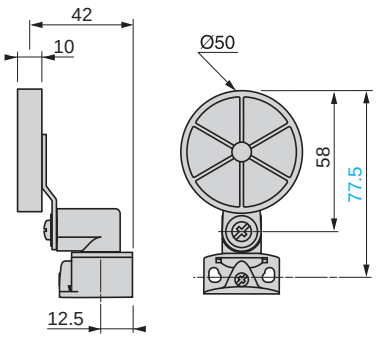
ZCE01 + ZCY18



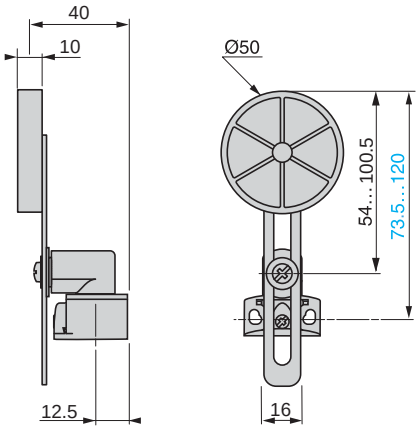
ZCE01 + ZCY45



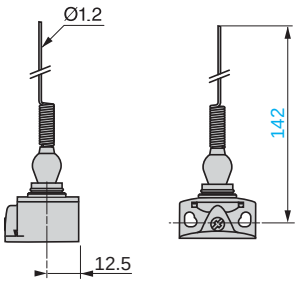
ZCE01 + ZCY39



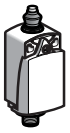
ZCE01 + ZCY49



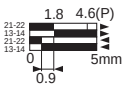
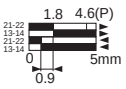
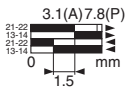
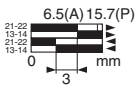
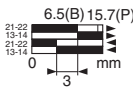
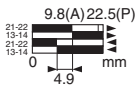
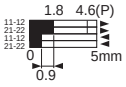
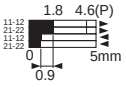
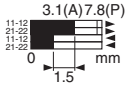
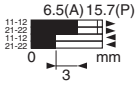
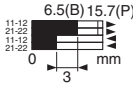
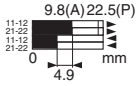
ZCE06



Limit switches
OsiSense XC Standard
Compact design, plastic, type 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 134.
(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	12 N	6 N		
	For positive opening	45 N	36 N	18 N		
Connection	M12 connector, Ui = 250 V, Ie = 3 A maximum, Ith = 3 A					

Connections

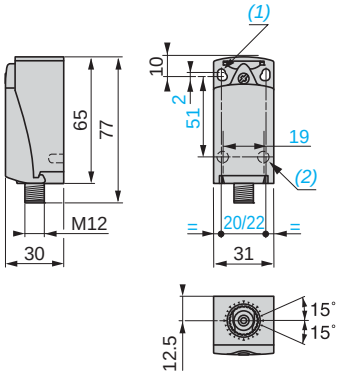
M12 connector

XE2SP2151
1-2: NC
3-4: NO

XE2SP2141
1-2: NC
3-4: NC

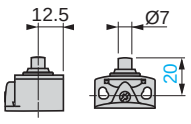
Dimensions

ZCP2●M12

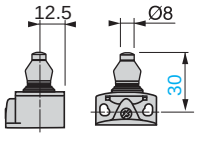


(1) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
(2) 2 x Ø 3 holes for support studs, depth 4 mm.
(3) Fixing nut thickness 3.5 mm.

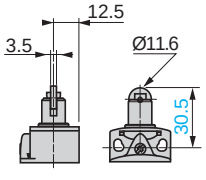
ZCE10



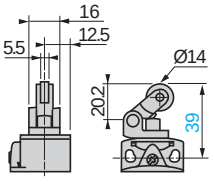
ZCE11



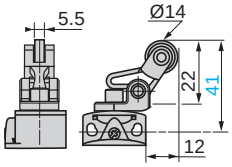
ZCE02



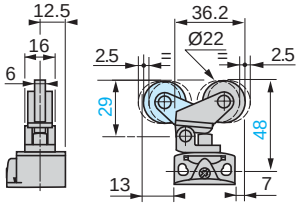
ZCE21



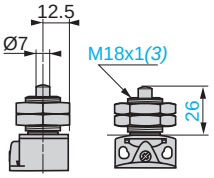
ZCE27



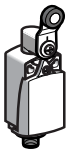
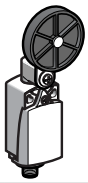
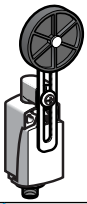
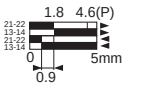
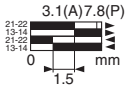
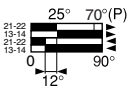
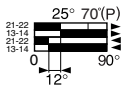
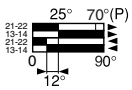
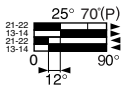
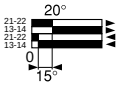
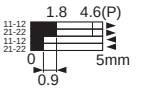
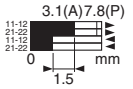
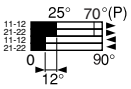
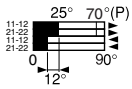
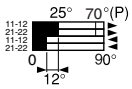
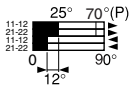
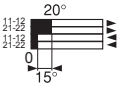
ZCE28



ZCEH0



Compact design
OsiSense XC Standard
Compact design, plastic, type XCKP
M12 connector

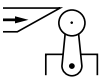
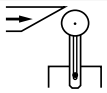
Type of head	Plunger (fixing by the head)		Rotary (fixing by the body)				Multi-directional
			Form A *(1)*				
							
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable length thermoplastic roller lever, Ø 50 mm	"Cat's whisker" *(2)*
References							
2-pole NC + NO snap action (XE2SP2151) 	**XCKP21H0M12** 	**XCKP21H2M12** 	**XCKP2118M12** 	**XCKP2145M12** 	**XCKP2139M12** 	**XCKP2149M12** 	**XCKP2106M12** 
2-pole NC + NC snap action (XE2S P2141) 	**ZCP29M12 + ZCEH0** 	**ZCP29M12 + ZCEH2** 	**ZCP29M12 + ZCE01 + ZCY18** 	**ZCP29M12 + ZCE01 + ZCY45** 	**ZCP29M12 + ZCE01 + ZCY39** 	**ZCP29M12 + ZCE01 + ZCY49** 	**ZCP29M12 + ZCE06** 
Weight (kg)	0.140	0.140	0.140	0.150	0.155	0.160	0.090

Contact operation
- ■ *closed*
- □ *open*

(A) = cam displacement
(P) = positive opening point
⊖ *NC contact with positive opening operation*

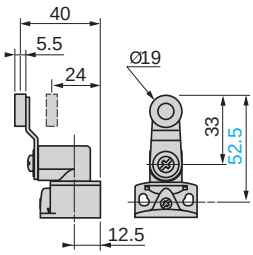
(1) Form conforming to EN 50047, see page 134.
(2) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics

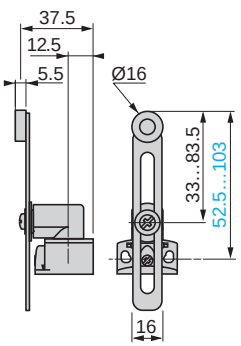
Switch actuation	On end	By 30° cam				By any moving part
Type of actuation						
Maximum actuation speed	0.5 m/s		1.5 m/s			1 m/s (any direct.)
Mechanical durability (in millions of operating cycles)	10					5
Minimum force or torque – For tripping	15 N	10 N	0.1 N.m			0.13 N.m
Minimum force or torque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

Dimensions

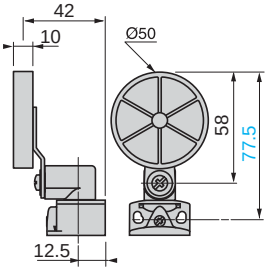
ZCE01 + ZCY18



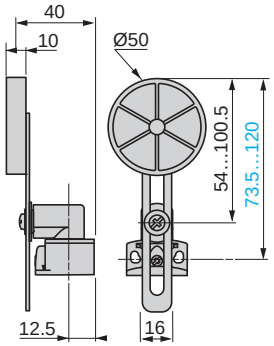
ZCE01 + ZCY45



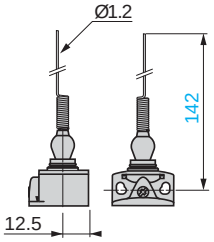
ZCE01 + ZCY39



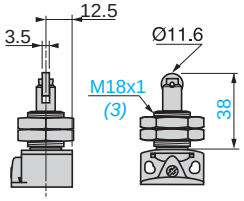
ZCE01 + ZCY49



ZCE06

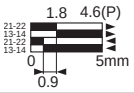
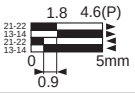
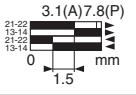
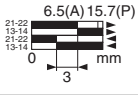
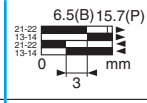
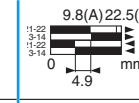
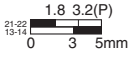
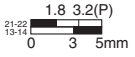
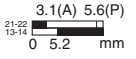
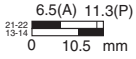
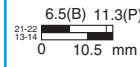
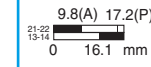
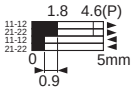
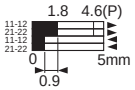
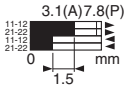
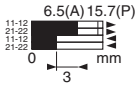
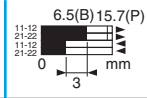
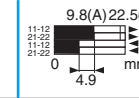
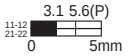
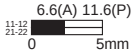
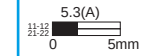
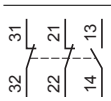
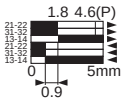
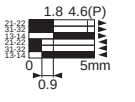
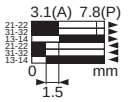
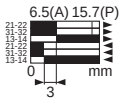
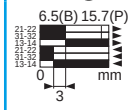
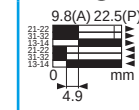
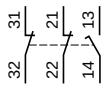
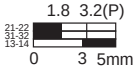
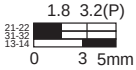
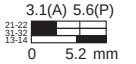
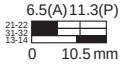
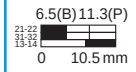
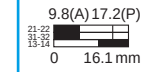


ZCEH2



(3) Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Compact design, metal, type 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 (XE2S P2151)**	**XCKD2110P16** ⊖ 	**XCKD2111P16** ⊖ 	**XCKD2102P16** ⊖ 	**XCKD2121P16** ⊖ 	**XCKD2127P16** ⊖ 	**XCKD2128P16** ⊖ 
 **2-pole NC + NO break before make, slow break (XE2N P2151)**	**XCKD2510P16** ⊖ 	**XCKD2511P16** ⊖ 	**XCKD2502P16** ⊖ 	**XCKD2521P16** ⊖ 	**XCKD2527P16** ⊖ 	**XCKD2528P16** ⊖ 
 **2-pole NC + NC snap action (XE2S P2141)**	**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 (XE2N P2141)**	**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 (XE3S P2141)**	**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 (XE3N P2141)**	**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

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***.

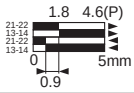
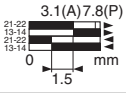
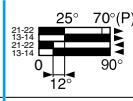
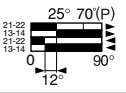
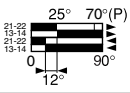
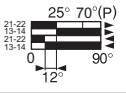
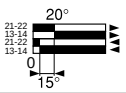
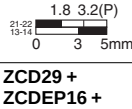
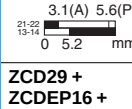
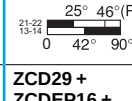
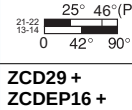
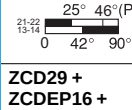
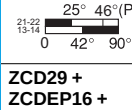
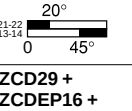
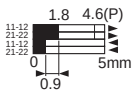
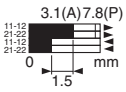
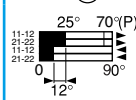
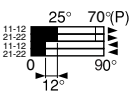
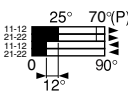
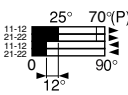
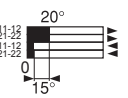
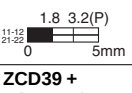
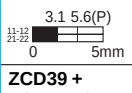
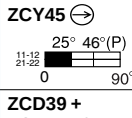
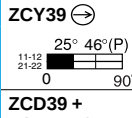
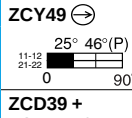
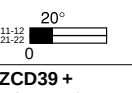
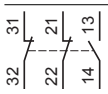
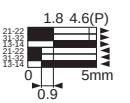
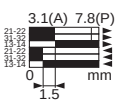
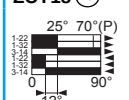
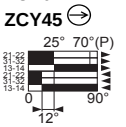
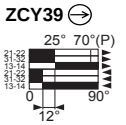
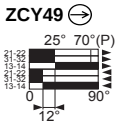
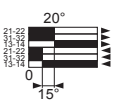
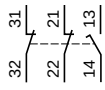
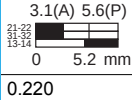
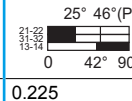
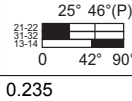
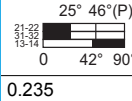
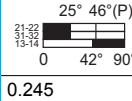
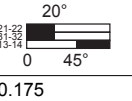
Contact operation ■ *closed* □ *open* — *(A) (B) = cam displacement (P) = positive opening point* — ⊖ *NC contact with positive opening operation*

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	12 N	6 N		
	For positive opening	45 N	36 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 134.
(2) Nitrile for indoor use.
(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Limit switches
OsiSense XC Standard
Compact design, metal, type XCKD
Complete switches with 1 cable entry

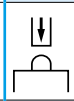
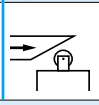
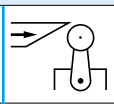
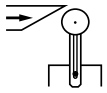
Type of head	Plunger (fixing by the head)		Rotary (fixing by the body)				Multi-directional
			Form A *(1)*				
							
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable 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 (XE2S P2151)**	**XCKD21H0P16** 	**XCKD21H2P16** 	**XCKD2118P16** 	**XCKD2145P16** 	**XCKD2139P16** 	**XCKD2149P16** 	**XCKD2106P16** 
 **2-pole NC + NO break before make, slow break (XE2N P2151)**	**XCKD25H0P16** 	**XCKD25H2P16** 	**XCKD2518P16** 	**XCKD2545P16** 	**XCKD2539P16** 	**XCKD2549P16** 	**XCKD2506P16** 
 **2-pole NC + NC snap action (XE2S P2141)**	**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 (XE2N P2141)**	**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 (XE3S P2141)**	**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 (XE3N P2141)**	**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: XCKD21H0P1 6 becomes **XCKD21H0G11** or ZCDEP16 becomes **ZCDEG11**.*

Contact operation ■ *closed* □ *open* — *(A) = cam displacement* — *(P) = positive opening point* — ⊖ *NC contact with positive opening operation*

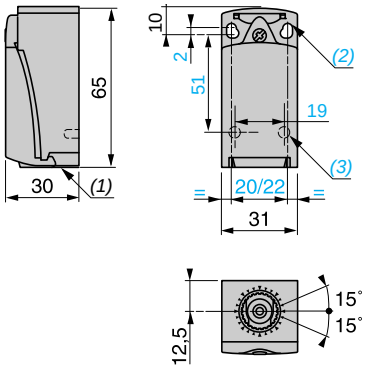
Characteristics

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				5 million
Minimum force or torque 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		–
Cable entry	1 entry tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm				

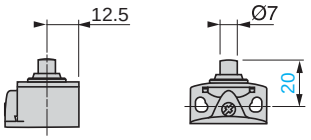
(1) Form conforming to EN 50047, see page 134.
(2) Value taken with actuation by moving part at 100 mm from the fixing.
(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Limit switches
OsiSense XC Standard
Compact design, metal, type XCKD
Complete switches with 1 cable entry

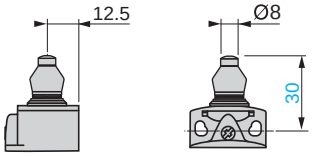
ZCD2● + ZCDEP16/ZCD3● + ZCDEP16



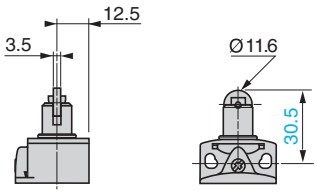
ZCE10



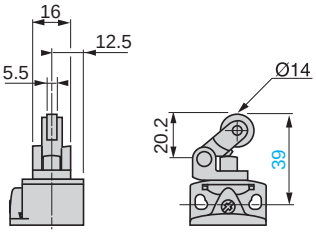
ZCE11



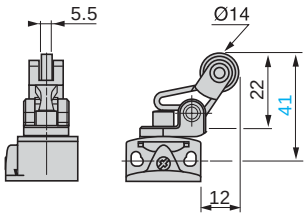
ZCE02



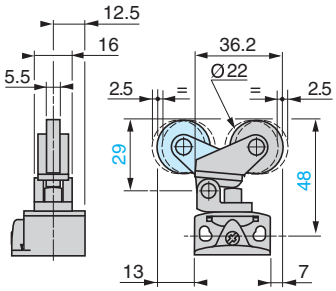
ZCE21



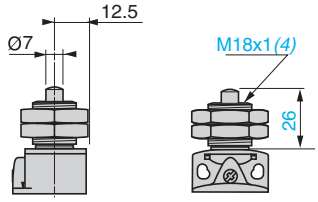
ZCE27



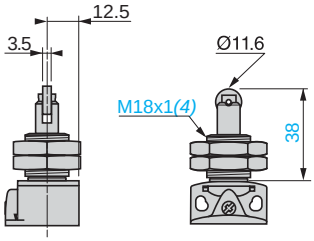
ZCE28



ZCEH0



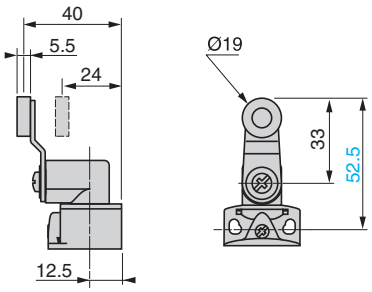
ZCEH2



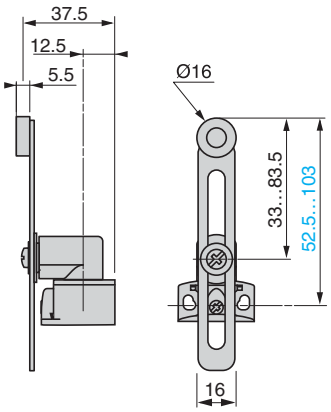
(1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland.
(2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.
(4) Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Compact design, metal, type XCKD
Complete switches with 1 cable entry

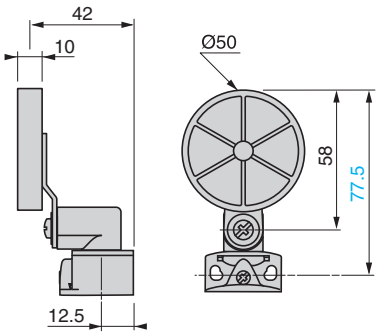
ZCE01 + ZCY18



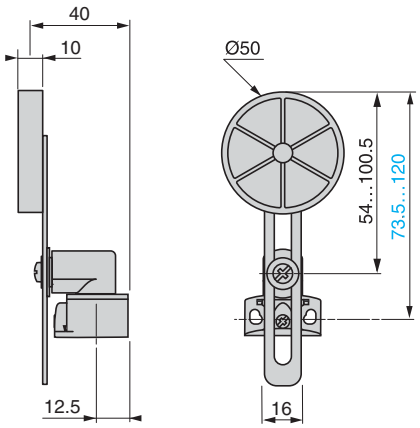
ZCE01 + ZCY45



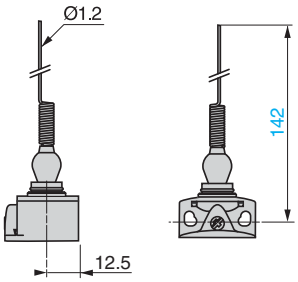
ZCE01 + ZCY39



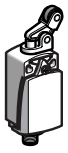
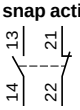
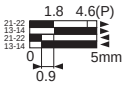
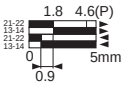
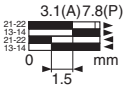
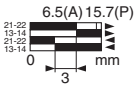
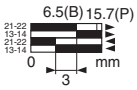
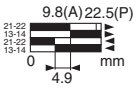
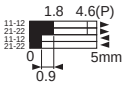
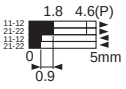
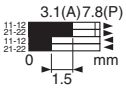
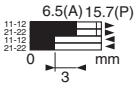
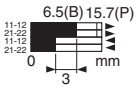
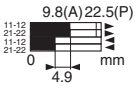
ZCE01 + ZCY49



ZCE06

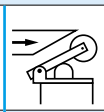


Limit switches
OsiSense XC Standard
Compact design, metal, type XCKD
M12 connector

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	Thermoplastic roller lever plunger, horiz. or vert. actuation in 1 direction
References						
2-pole NC + NO snap action (XE2S P2151) 	**XCKD2110M12** 	**XCKD2111M12** 	**XCKD2102M12** 	**XCKD2121M12** 	**XCKD2127M12** 	**XCKD2128M12** 
2-pole NC + NC snap action (XE2S P2141) 	**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 134.
(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	12 N	6 N		
	For positive opening	45 N	36 N	18 N		
Connection		M12 connector, Ui = 60 V, Ie = 4 A maximum, Ith = 4 A				

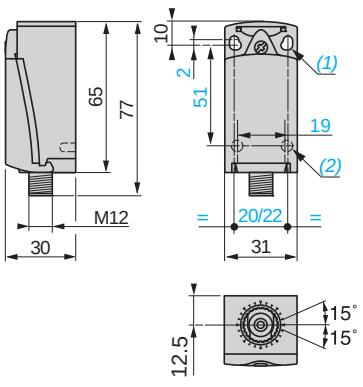
Connections

M12 connector

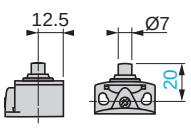
	XE2S P2151	XE2S P2141
1	1-2: NC	1-2: NC
2	3-4: NO	3-4: NO
3	5: ⏚	5: ⏚
4		
5		

Dimensions

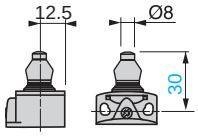
ZCD2●M12



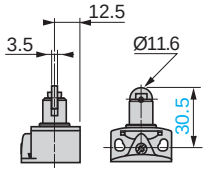
ZCE10



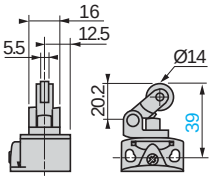
ZCE11



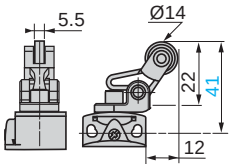
ZCE02



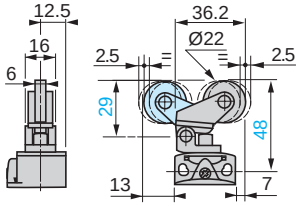
ZCE21



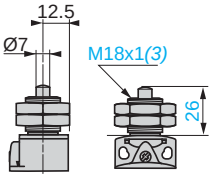
ZCE27



ZCE28

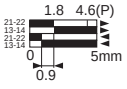
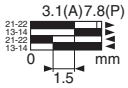
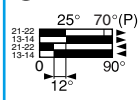
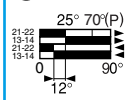
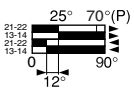
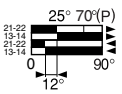
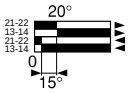
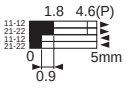
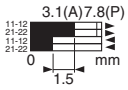
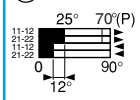
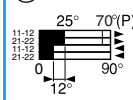
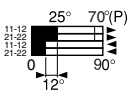
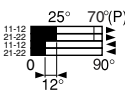
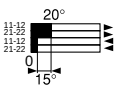


ZCEH0



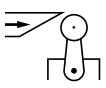
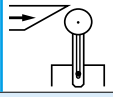
(1) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
(2) 2 x Ø 3 holes for support studs, depth 4 mm.
(3) Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Compact design, metal, type 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 (XE2S P2151) 	**XCKD21H0M12** 	**XCKD21H2M12** 	**XCKD2118M12** 	**XCKD2145M12** 	**XCKD2139M12** 	**XCKD2149M12** 	**XCKD2106M12** 
2-pole NC + NC snap action (XE2S P2141) 	**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	■ *closed* □ *open*		*(A) = cam displacement* *(P) = positive opening point*		⊖ *NC contact with positive opening operation*		

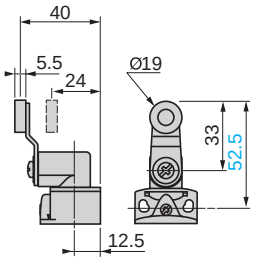
(1) Form conforming to EN 50047, see page 134.
(2) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics

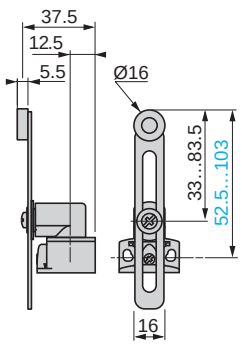
Switch actuation	On end	By 30° cam				By any moving part
Type of actuation						
Maximum actuation speed	0.5 m/s		1.5 m/s			1 m/s (any direct.)
Mechanical durability (in millions of operating cycles)	10					5
Minimum force or torque For tripping	15 N	10 N	0.1 N.m			0.13 N.m
Minimum force or torque For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

Dimensions

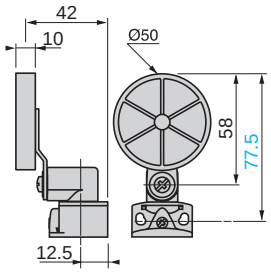
ZCE01 + ZCY18



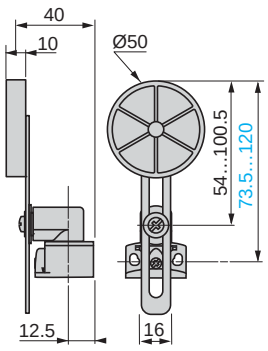
ZCE01 + ZCY45



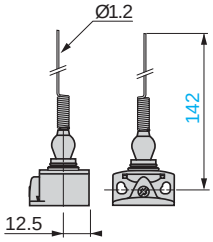
ZCE01 + ZCY39



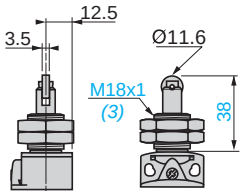
ZCE01 + ZCY49



ZCE06

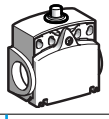
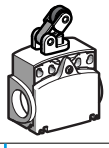
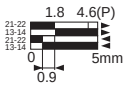
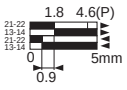
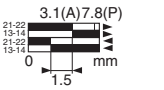
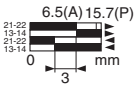
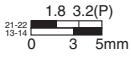
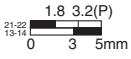
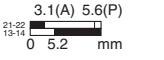
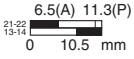
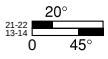
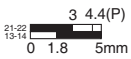
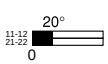
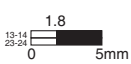
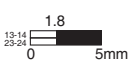
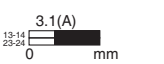
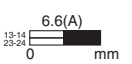


ZCEH2



(3) Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Compact design, plastic, type XCKT
Complete switches with 2 cable entries

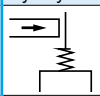
Type of head	Plunger (fixing by the body)				Multi-directional
	Form B *(1)*		Form C *(1)*	Form E *(1)*	
					
Type of operator	Metal end plunger	Metal end plunger with elastomer boot *(2)*	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	"Cat's whisker" *(3)*
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* □ *open* — *(A) = cam displacement* *(P) = positive opening point* — ⊖ *NC contact with positive opening operation*

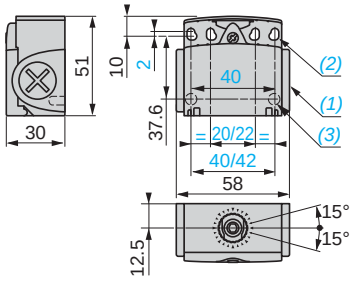
Characteristics

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 m/s (any direction)
Mechanical durability (in millions of operating cycles)		15	10	15	5
Minimum force or torque	For tripping	15 N	12 N	6 N	0.3 N.m
	For positive opening	45 N	36 N	18 N	–
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 134. (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.

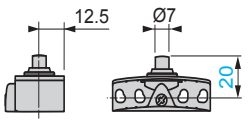
Dimensions

ZCT2●P16

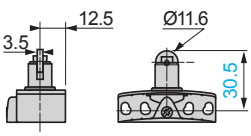


(1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland.
(2) 4 elongated holes Ø 4.3 x 6.3 mm on 22/42mm ctrs, 4 holes Ø 4.3 on 20/40 mm ctrs.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

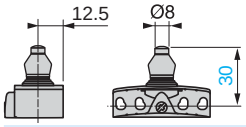
ZCE10



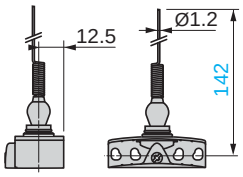
ZCE02



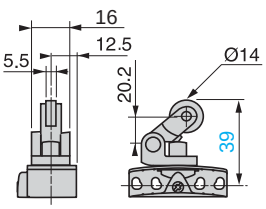
ZCE11



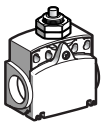
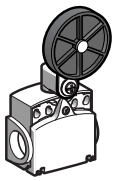
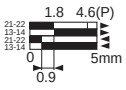
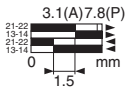
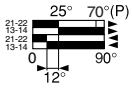
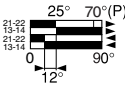
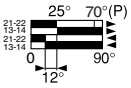
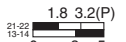
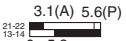
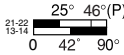
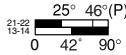
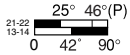
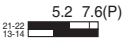
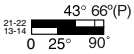
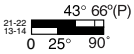
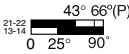
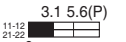
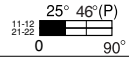
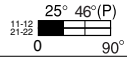
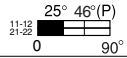
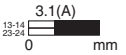
ZCE06



ZCE21



Limit switches
OsiSense XC Standard
Compact design, plastic, type XCKT
Complete switches with 2 cable entries

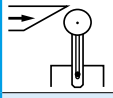
Type of head	Plunger (fixing by the head)		Rotary (fixing by the body)		
			Form A *(1)*		
					
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm
References of complete switches with 2 ISO M16 x 1.5 cable entries *(2)*					
13 21 / 14 22 **2-pole NC + NO snap action (XE2SP3151)**	**XCKT21H0P16** ⊖ 	**XCKT21H2P16** ⊖ 	**XCKT2118P16** ⊖ 	**XCKT2145P16** ⊖ 	**XCKT2139P16** ⊖ 
13 21 / 14 22 **2-pole NC + NO break before make, slow break (XE2NP3151)**	**ZCT25P16 + ZCEH0** ⊖ 	**ZCT25P16 + ZCEH2** ⊖ 	**ZCT25P16 + ZCE01 + ZCY18** ⊖ 	**ZCT25P16 + ZCE01 + ZCY45** ⊖ 	**ZCT25P16 + ZCE01 + ZCY39** ⊖ 
21 13 / 22 14 **2-pole NO + NC make before break, slow break (XE2NP3161)**	**ZCT26P16 + ZCEH0** ⊖ 	**ZCT26P16 + ZCEH2** ⊖ 	**ZCT26P16 + ZCE01 + ZCY18** ⊖ 	**ZCT26P16 + ZCE01 + ZCY45** ⊖ 	**ZCT26P16 + ZCE01 + ZCY39** ⊖ 
11 21 / 12 22 **2-pole NC + NC simultaneous, slow break (XE2NP2141)**	**ZCT27P16 + ZCEH0** ⊖ 	**ZCT27P16 + ZCEH2** ⊖ 	**ZCT27P16 + ZCE01 + ZCY18** ⊖ 	**ZCT27P16 + ZCE01 + ZCY45** ⊖ 	**ZCT27P16 + ZCE01 + ZCY39** ⊖ 
13 23 / 14 24 **2-pole NO + NO simultaneous, slow break (XE2NP3131)**	**ZCT28P16 + ZCEH0** 	**ZCT28P16 + ZCEH2** 	**ZCT28P16 + ZCE01 + ZCY18** 	**ZCT28P16 + ZCE01 + ZCY45** 	**ZCT28P16 + ZCE01 + ZCY39** 
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* □ *open* — *(A) = cam displacement* *(P) = positive opening point* — ⊖ *NC contact with positive opening operation*

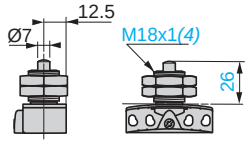
Characteristics

Switch actuation		On end	By 30° cam	
Type of actuation				
Maximum actuation speed		0.5 m/s		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)		

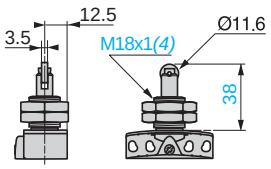
(1) Form conforming to EN 50047, see page 134.
(2) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Dimensions

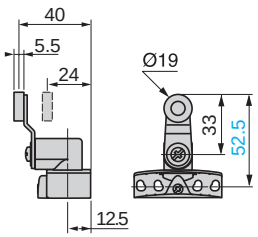
ZCEH0



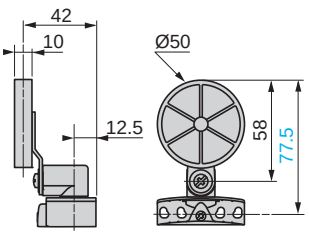
ZCEH2



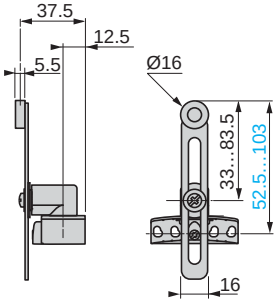
ZCE01 + ZCY18



ZCE01 + ZCY39

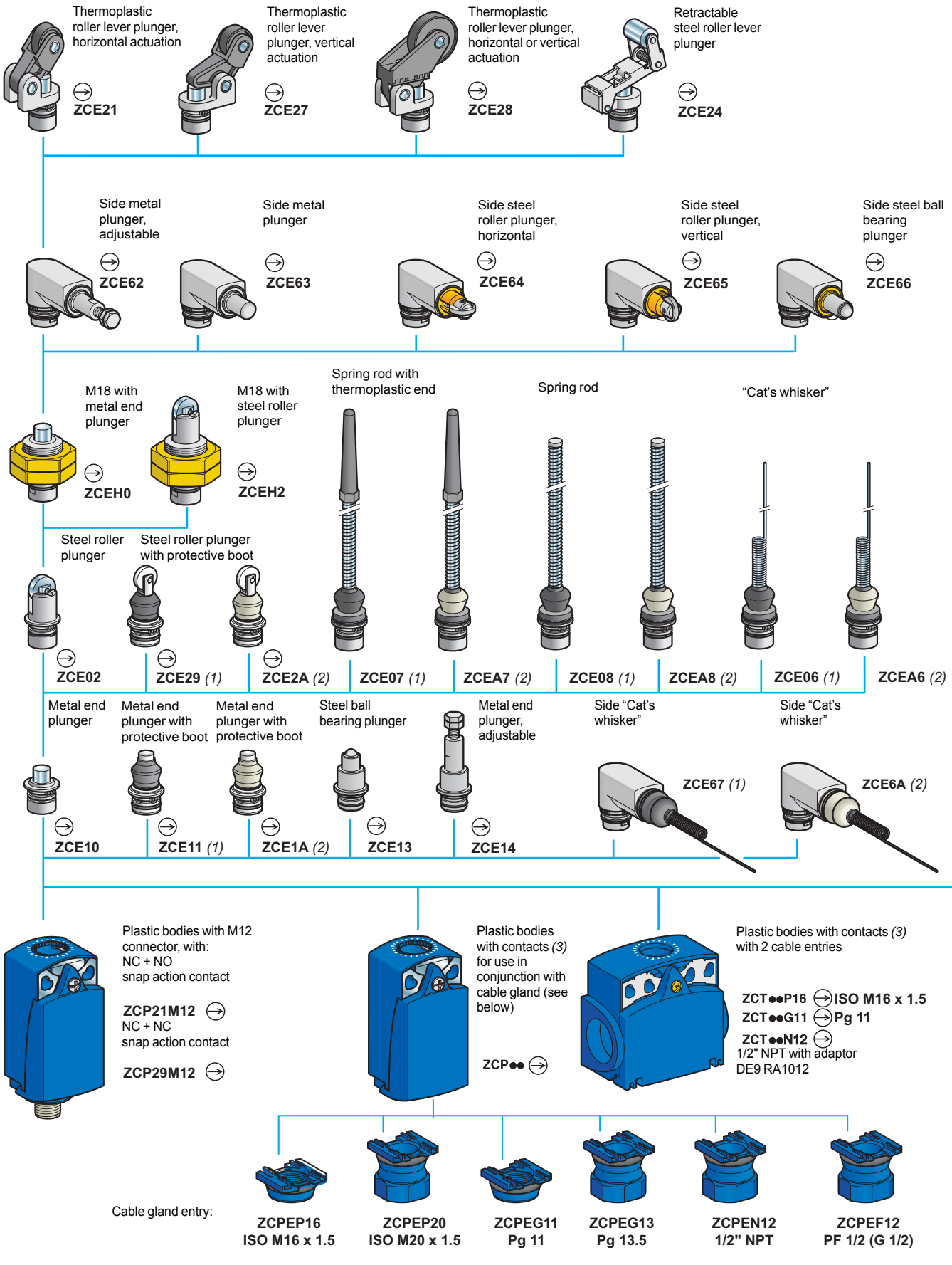


ZCE01 + ZCY45



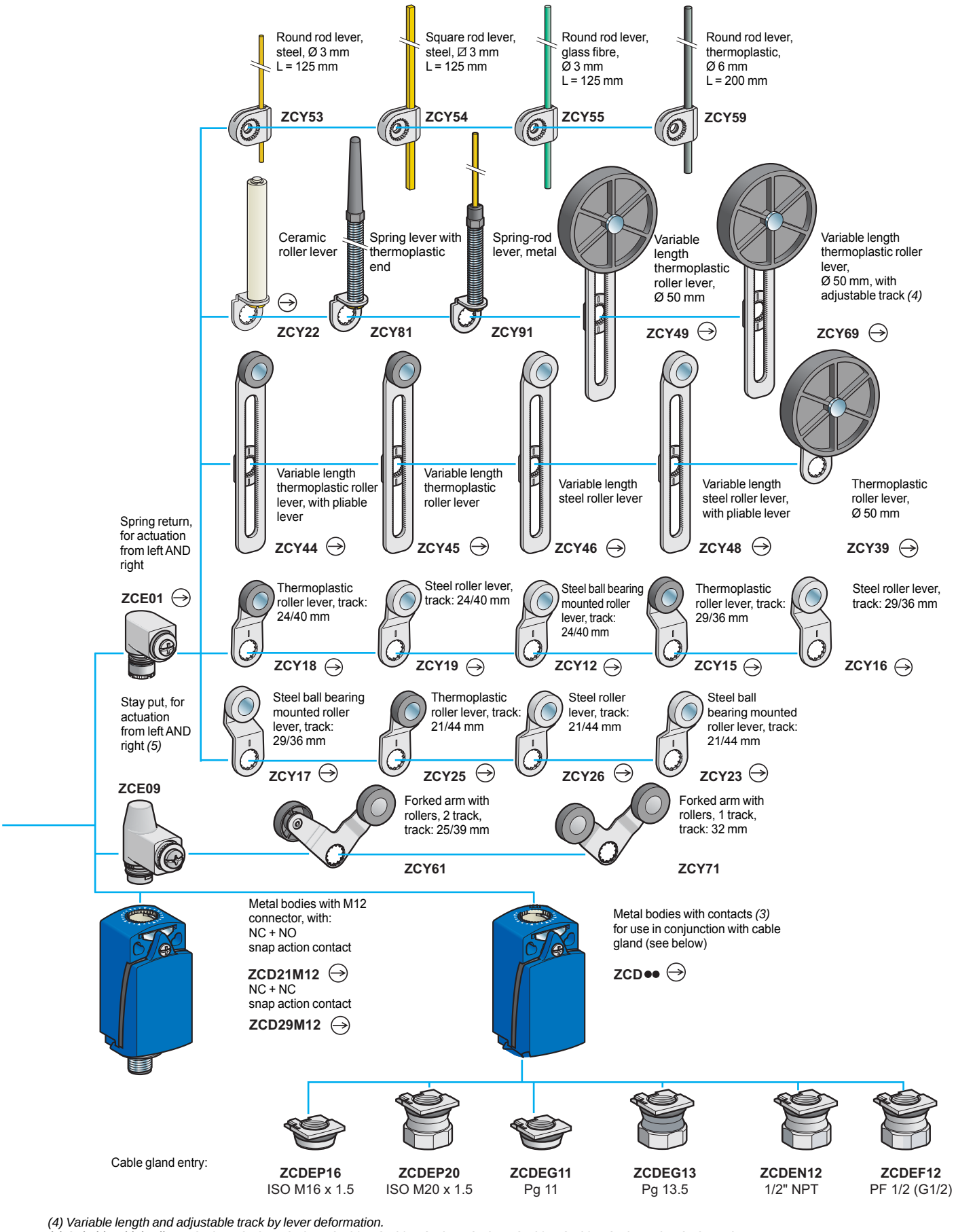
(4) Fixing nut thickness 3.5 mm.

Limit switches
OsiSense XC Standard
Compact design, types XCKD, XCKP and XCKT
Variable composition



(1) Nitrile boot for indoor use.
(2) Silicone boot for outdoor use.
(3) For further information, see page 48.

Limit switches
OsiSense XC Standard
Compact design, types XCKD, XCKP and XCKT
Variable composition



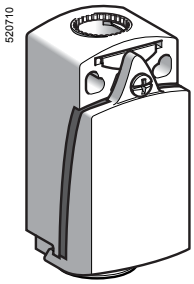
(4) Variable length and adjustable track by lever deformation.
(5) Suitable with bodies: ZCD21, ZCP21, ZCT21, ZCD29, ZCP29, ZCD31, ZCP31, ZCD39, ZCP39, ZCD2●M12, ZCP2●M12

Limit switches

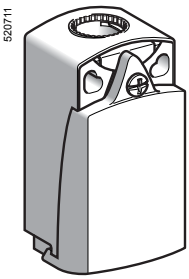
OsiSense XC Standard

Compact design, metal, type type XCKD or plastic, type XCKP

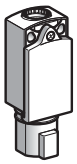
Adaptable sub-assemblies: bodies with contacts



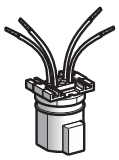
ZCD●●



ZCP●●



ZCP21D44



ZCPED44

Bodies with contacts, types XCKD and XCKP *(1)*

Type of contact	Positive operation *(2)*	Scheme	Body material	Reference	Weight kg
2-pole					
NC + NO snap action (XE2SP2151)	⊖	13 21 / 14 22	Metal	**ZCD21**	0.140
			Plastic	**ZCP21**	0.070
NC + NC snap action XE2SP2141)	⊖	11 21 / 12 22	Metal	**ZCD29**	0.140
			Plastic	**ZCP29**	0.070
NC + NO break before make, slow break (XE2NP2151)	⊖	13 21 / 14 22	Metal	**ZCD25**	0.140
			Plastic	**ZCP25**	0.070
NO + NC make before break, slow break (XE2NP2161)	⊖	13 21 / 14 22	Metal	**ZCD26**	0.140
			Plastic	**ZCP26**	0.070
NC + NC simultaneous, slow break (XE2NP2141)	⊖	11 21 / 12 22	Metal	**ZCD27**	0.140
			Plastic	**ZCP27**	0.070
NO + NO simultaneous, slow break (XE2NP2131)	–	13 23 / 14 24	Metal	**ZCD28**	0.140
			Plastic	**ZCP28**	0.070
3-pole					
NC + NO + NO snap action (XE3SP2151)	⊖	21 33 13 / 22 34 14	Metal	**ZCD31**	0.140
			Plastic	**ZCP31**	0.070
NC + NC + NO snap action (XE3SP2141)	⊖	31 21 13 / 32 22 14	Metal	**ZCD39**	0.140
			Plastic	**ZCP39**	0.070
NC + NC + NO break before make, slow break (XE3NP2141)	⊖	31 21 13 / 32 22 14	Metal	**ZCD37**	0.140
			Plastic	**ZCP37**	0.070
NC + NO + NO break before make, slow break (XE3NP2151)	⊖	21 33 13 / 22 34 14	Metal	**ZCD35**	0.140
			Plastic	**ZCP35**	0.070

Components for connection using DEUTSCH connector

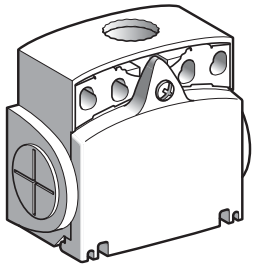
Bodies with contacts for DEUTSCH connector

Type of contact	Positive operation *(2)*	Scheme	Cable entry	Reference	Weight kg
2-pole					
NC + NO snap action (XE2SP2151)	⊖	13 21 / 14 22	Connector	**ZCP21D44**	0.065
DEUTSCH male connector DT04-4P				**ZCPED44**	0.015

(1) Bodies with gold contacts or eyelet type connections: please consult your Regional Sales Office.
(2) ⊖: bodies with contacts assuring positive opening operation.

Limit switches
OsiSense XC Standard
Compact design, plastic, type XCKT
Adaptable sub-assemblies: bodies with contacts

561390

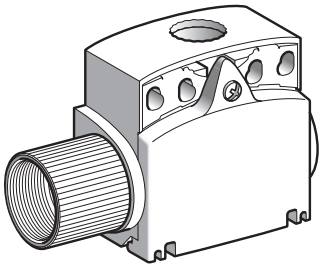


ZCT●●●

Bodies with contacts, type XCKT plastic, 2 cable entries

Type of contact	Positive operation *(1)*	Scheme	Cable entries	Reference	Weight kg
2-pole					
NC + NO snap action (XE2SP3151)	⊖	13 21 / 14 22	ISO M16 x 1.5	**ZCT21P16**	0.085
			Pg 11	**ZCT21G11**	0.085
NC + NO break before make, slow break (XE2NP3151)	⊖	13 21 / 14 22	ISO M16 x 1.5	**ZCT25P16**	0.085
			Pg 11	**ZCT25G11**	0.085
NC + NC simultaneous, slow break (XE2NP3141)	⊖	11 21 / 12 22	ISO M16 x 1.5	**ZCT27P16**	0.085
			Pg 11	**ZCT27G11**	0.085
NO + NO simultaneous, slow break (XE2NP3131)	–	13 23 / 14 24	ISO M16 x 1.5	**ZCT28P16**	0.085
			Pg 11	**ZCT28G11**	0.085
NO + NC make before break, slow break (XE2NP3161)	⊖	13 21 / 14 22	ISO M16 x 1.5	**ZCT26P16**	0.085
			Pg 11	**ZCT26G11**	0.085

561387



ZCT●●N12

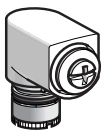
Bodies with contacts, type XCKT plastic, 2 cable entries with 1/2" NPT adaptor

Type of contact	Positive operation *(1)*	Scheme	Reference	Weight kg
2-pole				
NC + NO snap action (XE2SP3151)	⊖	13 21 / 14 22	**ZCT21N12**	0.130
NC + NO break before make, slow break (XE2NP3151)	⊖	13 21 / 14 22	**ZCT25N12**	0.130
NC + NC simultaneous, slow break (XE2NP3141)	⊖	11 21 / 12 22	**ZCT27N12**	0.130
NO + NO simultaneous, slow break (XE2NP3131)	–	13 23 / 14 24	**ZCT28N12**	0.130
NO + NC make before break, slow break (XE2NP3161)	⊖	13 21 / 14 22	**ZCT26N12**	0.130

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

Limit switches
OsiSense XC Standard
Compact design, metal, type XCKD or plastic, types XCKP and XCKT
Adaptable sub-assemblies: bodies with contacts

561427

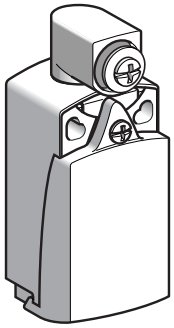


ZCE05

561392

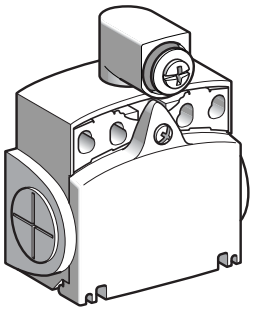
DE9RA1012

561388



XCK●2●01●●

561389



XCKT2●01●●

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	**DE9 RA1012**	0.050

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

Type of contact	Scheme	Positive operation *(2)*	Cable entry	Reference	Weight kg
2-pole					
NC + NO snap action (XE2SP2151)	13 21 / 14 22	⊖	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)	13 21 / 14 22	⊖	ISO M16 x 1.5	**XCKP2501P16**	0.115
		⊖	Pg 11	**XCKP2501G11**	0.115

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

Type of contact	Scheme	Positive operation *(2)*	Cable entry	Reference	Weight kg
2-pole					
NC + NO snap action (XE2SP2151)	13 21 / 14 22	⊖	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)	13 21 / 14 22	⊖	ISO M16 x 1.5	**XCKD2501P16**	0.185
		⊖	Pg 11	**XCKD2501G11**	0.185

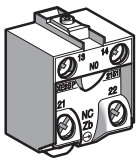
Bodies with contacts, type XCKT plastic, with rotary head (without operating lever)

Type of contact	Scheme	Positive operation *(2)*	Cable entry	Reference	Weight kg
2-pole					
NC + NO snap action (XE2SP3151)	13 21 / 14 22	⊖	ISO M16 x 1.5	**XCKT2101P16**	0.130
		⊖	Pg 11	**XCKT2101G11**	0.130
NC + NO break before make, slow break (XE2NP3151)	13 21 / 14 22	⊖	ISO M16 x 1.5	**XCKT2501P16**	0.130
		⊖	Pg 11	**XCKT2501G11**	0.130

(1) For programming see page 128.
(2) ⊖: bodies with contact assuring positive opening operation.

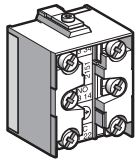
Limit switches
OsiSense XC Standard
Compact design, metal, type XCKD or plastic, types XCKP and XCKT
Adaptable sub-assemblies: contact blocks

561393



XE2●●21●●

561394



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
2-pole				
NC + NO snap action	⊖	13 21 / 14 22	**XE2SP2151**	0.020
NC + NC simultaneous, snap action	⊖	11 21 / 12 22	**XE2SP2141**	0.020
NC + NO break before make, slow break	⊖	13 21 / 14 22	**XE2NP2151**	0.020
NO + NC make before break, slow break	⊖	13 21 / 14 22	**XE2NP2161**	0.020
NC + NC simultaneous, slow break	⊖	11 21 / 12 22	**XE2NP2141**	0.020
NO + NO simultaneous, slow break	–	13 23 / 14 24	**XE2NP2131**	0.020
3-pole				
NC + NO + NO snap action	⊖	21 33 13 / 22 34 14	**XE3SP2151**	0.035
NC + NC + NO snap action	⊖	31 21 13 / 32 22 14	**XE3SP2141**	0.035
NC + NC + NO break before make, slow break	⊖	31 21 13 / 32 22 14	**XE3NP2141**	0.035
NC + NO + NO break before make, slow break	⊖	21 33 13 / 22 34 14	**XE3NP2151**	0.035

Contact blocks with screw clamp terminals for XCKT

Type of contact	Positive operation *(1)*	Scheme	Reference for standard contacts	Weight kg
2-pole				
NC + NO snap action	⊖	13 21 / 14 22	**XE2SP3151**	0.015
NC + NO break before make, slow break	⊖	13 21 / 14 22	**XE2NP3151**	0.015
NO + NC make before break, slow break	⊖	13 21 / 14 22	**XE2NP3161**	0.015
NC + NC simultaneous, slow break	⊖	11 21 / 12 22	**XE2NP3141**	0.015
NO + NO simultaneous, slow break	–	13 23 / 14 24	**XE2NP3131**	0.015

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

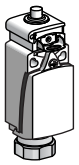
Limit switches
OsiSense XC Standard
Compact design, plastic, with reset,
types XCPR and XCTR
Compact design, metal, with reset, type XCDR

■ XCPR, XCDR
with 1 cable entry

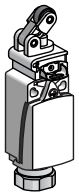
□ With head for linear movement (plunger). Fixing by the body

XCDR

520412



520414



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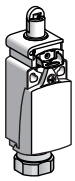
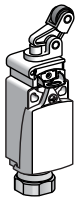
XCPR

520425



520427



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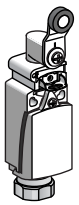
□ With head for rotary movement (lever) or multi-directional. Fixing by the body

XCDR

520416



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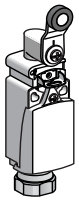
XCPR

520428



Page 54

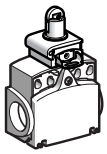
■ XCTR
with 2 cable entries
Tripping/resetting points and fixing centres conform to CENELEC 50047

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

XCTR

520436

520437



Page 58

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

XCTR

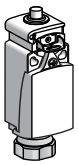
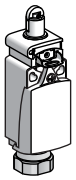
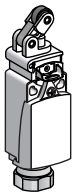
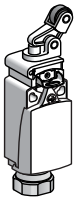
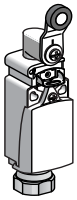
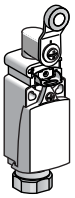
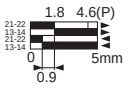
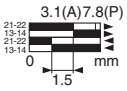
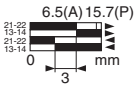
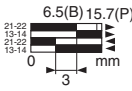
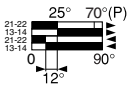
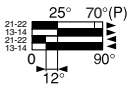
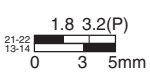
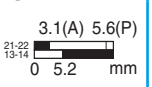
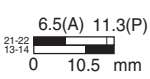
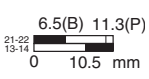
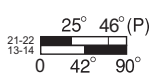
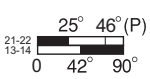
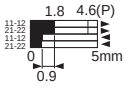
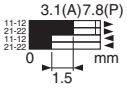
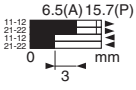
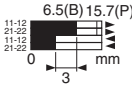
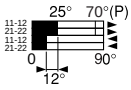
520438

Page 58

Limit switches
OsiSense XC Standard
Compact design, plastic, with reset, types XCPR and XCTR
Compact design, metal, with reset, type XCDR

Environment characteristics		
Conformity to standards	Products	EN/IEC 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	EN/IEC 60204-1
Product certifications		UL, CSA
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)
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms)
Electric shock protection		Class II conforming to IEC 61140 and NF C 20-030 for **XCPR** and **XCTR**
		Class I conforming to IEC 61140 and NF C 20-030 for **XCDR**
Degree of protection		**IP 66 and IP 67 conforming to IEC 60529; IK 04 conforming to EN 50102**
Repeat accuracy		0.1 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry	Depending on model	Either: tapped entry for n° 13 cable gland, tapped ISO M20 x 1.5 or tapped 1/2" NPT
Materials		**XCDR**: Zamak bodies and heads, **XCPR** and **XCTR**: plastic bodies, Zamak heads
Contact block characteristics		
Rated operational characteristics		∼ 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
Rated insulation voltage		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
Rated impulse withstand voltage		U imp = 6 kV conforming to EN/IEC 60947-1, IEC 60664
Positive operation (depending on model)		NC contacts with positive opening operation conforming to EN/IEC 60947-5-1 Appendix K
Resistance across terminals		≤ 25 mΩ conforming to IEC 60255-7 category 3
Short-circuit protection		10 A cartridge fuse type gG (gl)
Connection (screw clamp terminals)	XE2SP2151	Clamping capacity, min: 1 x 0.34 mm^2, max: 2 x 1.5 mm^2
	XE2NP2151	Clamping capacity, min: 1 x 0.5 mm^2, max: 2 x 2.5 mm^2
Minimum actuation speed (for head with end plunger)		**XE2SP2151**: 0.01 m/minute
		XE2NP2151: 6 m/minute

Limit switches
OsiSense XC Standard
Compact design, plastic, with reset,type 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)**	**XCPR2110P20** 	**XCPR2102P20** 	**XCPR2121P20** 	**XCPR2127P20** 	**XCPR2118P20** 	**XCPR2119P20** 
 **2-pole NC + NO break before make, slow break (XE2NP2151)**	**XCPR2510P20** 	**XCPR2502P20** 	**XCPR2521P20** 	**XCPR2527P20** 	**XCPR2518P20** 	**XCPR2519P20** 
 **2-pole NC + NC snap action (XE2SP2141)**	**XCPR2910P20** 	**XCPR2902P20** 	**XCPR2921P20** 	**XCPR2927P20** 	**XCPR2918P20** 	–
Weight (kg)	0.115	0.115	0.125	0.120	0.155	–

References of complete switches with 1 Pg 13.5 cable entry

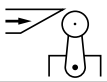
For complete switches with 1 Pg 13.5 cable entry replace P20 by **G13**.
Example: XCPR2110P20 becomes **XCPR2110G13**.

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**.

Contact operation — *closed* / *open* — *(A) (B) = cam displacement* *(P) = positive opening point* — *⊖ NC contact with positive opening operation*

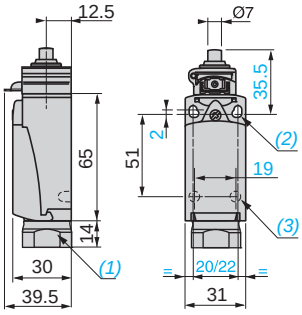
Characteristics

Switch actuation		On end	By 30° cam		
Type of actuation				 	
Maximum actuation speed		0.5 m/s		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 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			
Other versions		Complete switches with cable entries other than those listed above. please consult our Customer Care Centre.			

Limit switches
OsiSense XC Standard
Compact design, plastic, with reset,type XCPR
Complete switches with 1 cable entry

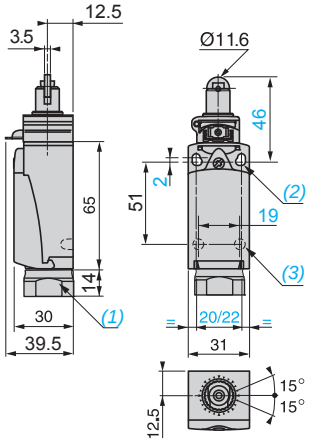
Dimensions

XCPR2●10●●●

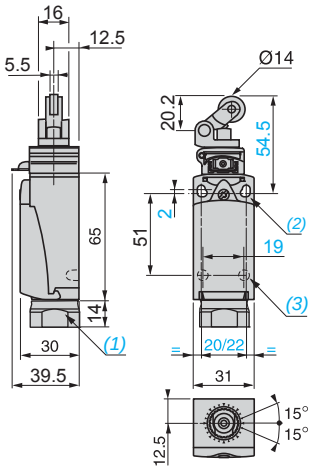


(1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.
(2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

XCPR2●02●●●

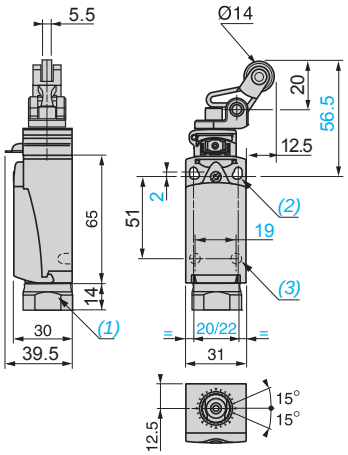


XCPR2●21●●●

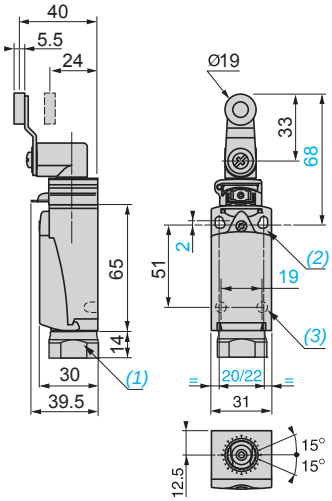


Dimensions

XCPR2●27●●●

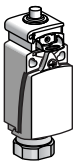
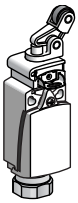
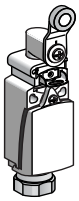
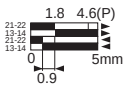
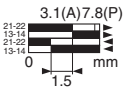
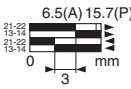
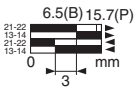
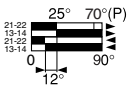
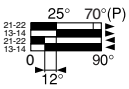
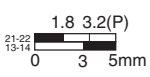
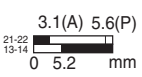
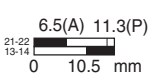
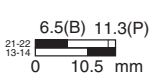
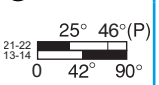
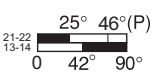


XCPR2●18●●●, XCPR2●19●●●



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

Limit switches
OsiSense XC Standard
Compact design, metal, with reset, type 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
References of complete switches with 1 ISO M20 x 1.5 cable entry						
 **2-pole NC + NO snap action (XE2SP2151)**	**XCDR2110P20** 	**XCDR2102P20** 	**XCDR2121P20** 	**XCDR2127P20** 	**XCDR2118P20** 	**XCDR2119P20** 
 **2-pole NC + NO break before make, slow break (XE2NP2151)**	**XCDR2510P20** 	**XCDR2502P20** 	**XCDR2521P20** 	**XCDR2527P20** 	**XCDR2518P20** 	**XCDR2519P20** 
Weight (kg)	0.215	0.220	0.225	0.225	0.255	0.255

References of complete switches with 1 Pg 13.5 cable entry

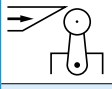
For complete switches with 1 Pg 13.5 cable entry replace P20 by **G13**.
Example: XCDR2110P20 becomes **XCDR2110G13**.

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**.

Contact operation — closed / open — *(A) (B) = cam displacement* — *(P) = positive opening point* — *⊖ NC contact with positive opening operation*

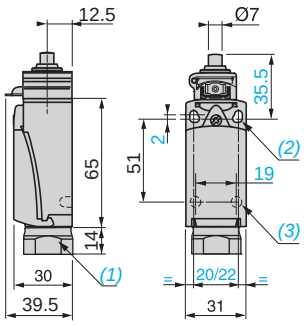
Characteristics

Switch actuation		On end	By 30° cam			
Type of actuation						
Maximum actuation speed		0.5 m/s		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 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
OsiSense XC Standard
Compact design, metal, with reset, type XCDR
Complete switches with 1 cable entry

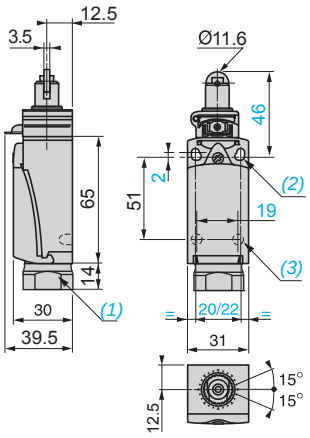
Dimensions

XCDR2●10●●●

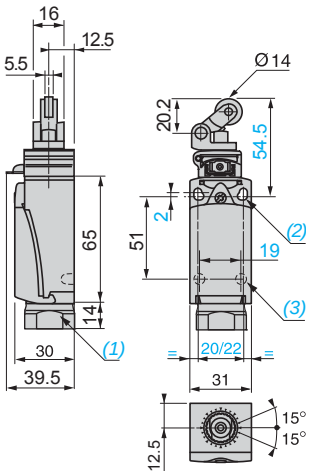


(1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.
(2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

XCDR2●02●●●

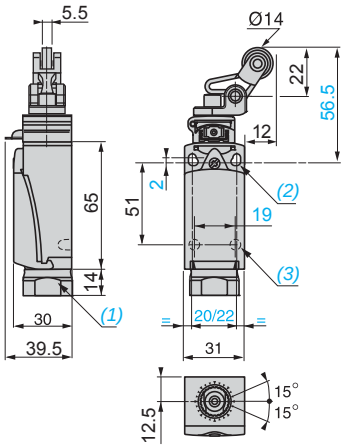


XCDR2●21●●●

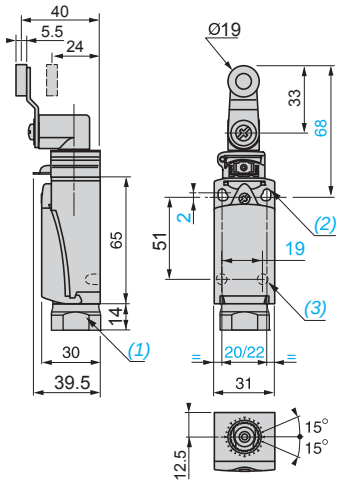


Dimensions

XCDR2●27●●●

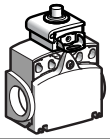
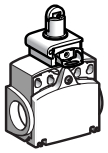
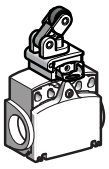
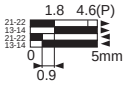
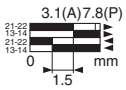
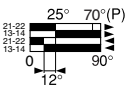
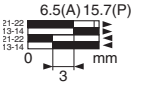
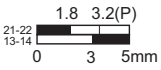
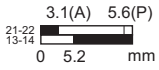
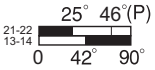
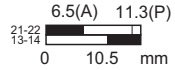


XCDR2●18●●●, XCDR2●19●●●



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

Limit switches
OsiSense XC Standard
Compact design, plastic, with reset, type XCTR
Complete switches with 2 cable entries

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

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

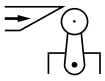
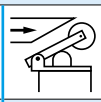
For complete switches with 2 entries for 1/2" NPT conduit replace P16 by **N12**.
Example: XCTR2110P16 becomes **XCTR2110N12**.

Contact operation

■ *closed*
□ *open*

(A) = cam displacement
(P) = positive opening point
⊖ *NC contact with positive opening operation*

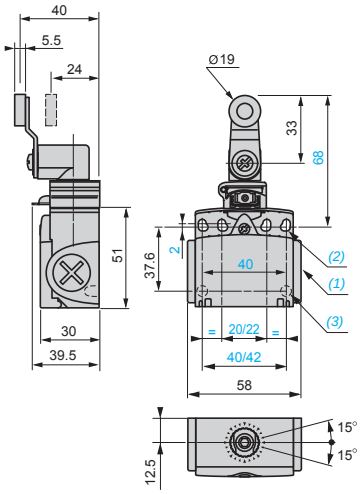
Characteristics

Switch actuation		On end	By 30° cam		
Type of actuation					
Maximum actuation speed		0.5 m/s		1.5 m/s	1 m/s
Minimum force or torque	For tripping	15 N	12 N	0.1 N.m	6 N
	For positive opening	45 N	36 N	0.25 N.m	18 N
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 **DE9RA1012**			

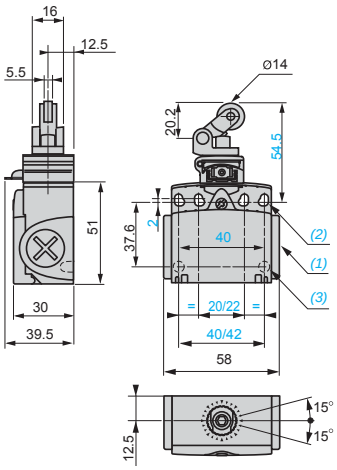
Limit switches
OsiSense XC Standard
Compact design, plastic, with reset, type XCTR
Complete switches with 2 cable entries

Dimensions

XCTR2●18●●●



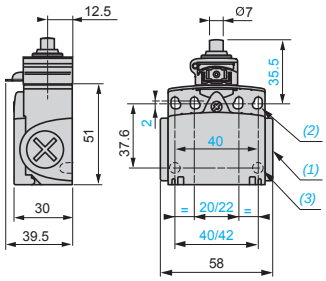
XCTR2●21●●●



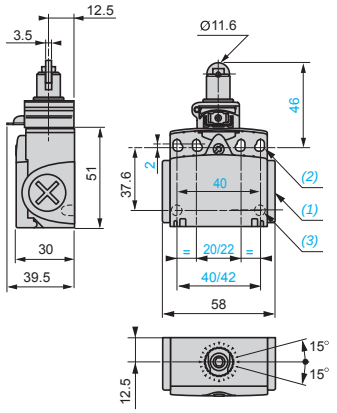
(1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland or 1/2" NPT conduit.
(2) 4 elongated holes Ø 4.3 x 6.3 mm on 22/42 mm centres, 4 holes Ø 4.3 on 20/40 mm centres.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

Dimensions

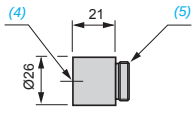
XCTR2●10●●●



XCTR2●02●●●



DE9RA1012



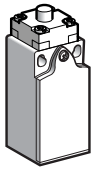
(1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland or tapped 1/2" NPT.
(2) 4 elongated holes Ø 4.3 x 6.3 mm on 22/42 mm centres, 4 holes Ø 4.3 on 20/40 mm centres.
(3) 2 x Ø 3 holes for support studs, depth 4 mm.
(4) Tapped entry for 1/2" NPT conduit.
(5) Pg 11 threaded sleeve.

Limit switches
OsiSense XC Basic
Compact design, plastic, types XCKN and XCNT

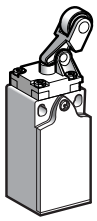
■ XCKN
with 1 cable entry
Conforming to CENELEC EN 50047

□ With head for linear movement (plunger)

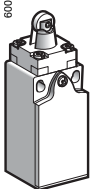
530748



530745



600039



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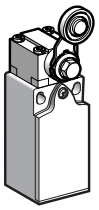
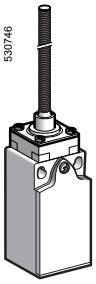
□ With head for rotary movement (lever) or multi-directional

530749



530746



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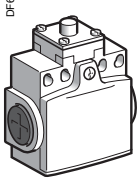
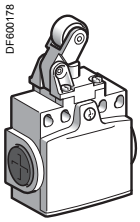
■ XCNT
with 2 cable entries
Conforming to CENELEC EN 50047

□ With head for linear movement (plunger)

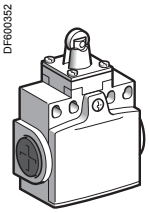
DF600177



DF600178



DF600352



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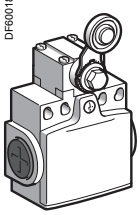
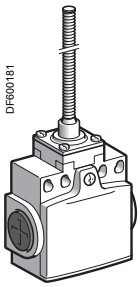
□ With head for rotary movement (lever) or multi-directional

DF600180



DF600181



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Limit switches
OsiSense XC Basic
Compact design, plastic, types XCKN and XCNT

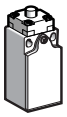
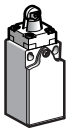
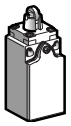
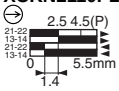
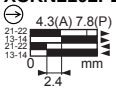
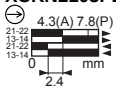
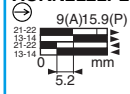
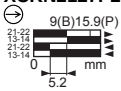
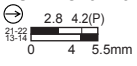
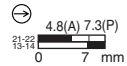
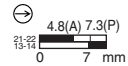
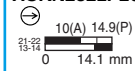
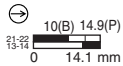
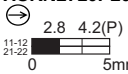
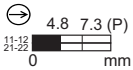
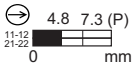
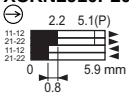
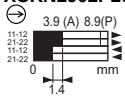
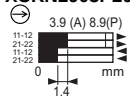
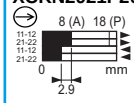
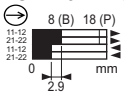
Environment characteristics

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	Version	Standard: "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 XCKN●●08: 10 gn, XCKN●●39 and XCKN●●49: 15 gn
Shock resistance	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
Electric shock protection		Class II conforming to IEC 61140 and NF C 20030
Degree of protection		**IP 65 conforming to IEC 60529; IK 04 conforming to EN 50102**
Cable entry		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).
Materials	Bodies	Plastic
	Heads	Plastic

Contact block characteristics

Rated operational characteristics		~ 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
Rated insulation voltage	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
Rated impulse withstand voltage	2-pole contact	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
Positive operation		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
Short-circuit protection		10 A cartridge fuse type gG (gI)
Connection	Screw clamp terminals	Clamping capacity, min: 1 x 0.34 mm^2, max: 2 x 1.5 mm^2

Limit switches
OsiSense XC Basic
Compact design, plastic, type 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**	**XCKN2110P20** 	**XCKN2102P20** 	**XCKN2103P20** 	**XCKN2121P20** 	**XCKN2127P20** 
 **2-pole N/C + N/O break before make, slow break**	**XCKN2510P20** 	**XCKN2502P20** 	**XCKN2503P20** 	**XCKN2521P20** 	**XCKN2527P20** 
 **2-pole NC + NC simultaneous, slow break**	**XCKN2710P20** 	**XCKN2702P20** 	**XCKN2703P20** 	**XCKN2721P20** 	**XCKN2727P20** 
 **2-pole NC + NC snap action**	**XCKN2910P20** 	**XCKN2902P20** 	**XCKN2903P20** 	**XCKN2921P20** 	**XCKN2927P20** 
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

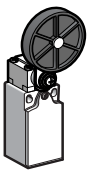
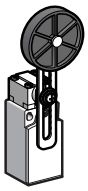
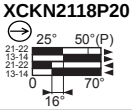
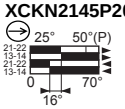
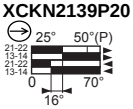
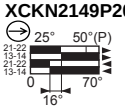
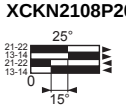
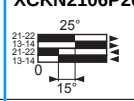
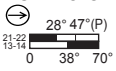
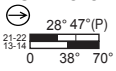
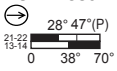
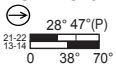
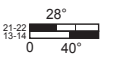
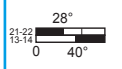
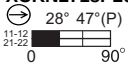
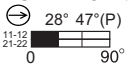
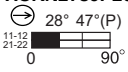
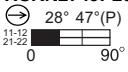
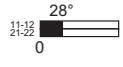
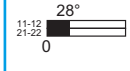
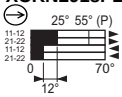
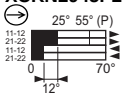
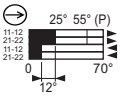
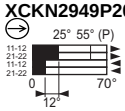
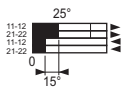
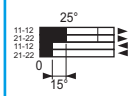
For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult our Customer Care Centre.

Other contacts

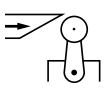
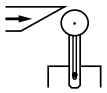
For complete switches with 2-pole contacts:
NO + NC make before break, slow break,
NO + NO simultaneous, slow break, please consult our Customer Care Centre.

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
OsiSense XC Basic
Compact design, plastic, type 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						
 **2-pole NC + NO snap action**	**XCKN2118P20** 	**XCKN2145P20** 	**XCKN2139P20** 	**XCKN2149P20** 	**XCKN2108P20** 	**XCKN2106P20** 
 **2-pole N/C + N/O break before make, slow break**	**XCKN2518P20** 	**XCKN2545P20** 	**XCKN2539P20** 	**XCKN2549P20** 	**XCKN2508P20** 	**XCKN2506P20** 
 **2-pole NC + NC simultaneous, slow break**	**XCKN2718P20** 	**XCKN2745P20** 	**XCKN2739P20** 	**XCKN2749P20** 	**XCKN2708P20** 	**XCKN2706P20** 
 **2-pole NC + NC snap action**	**XCKN2918P20** 	**XCKN2945P20** 	**XCKN2939P20** 	**XCKN2949P20** 	**XCKN2908P20** 	**XCKN2906P20** 
Weight (kg)	0.085	0.090	0.110	0.115	0.085	0.075
Contact operation	■ *closed* □ *open*		*(A) (B) = cam displacement* *(P) = positive opening point*		⊖ *NC contact with positive opening operation*	

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	0.13 N.m
	For positive opening	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: XCKN2118P20 becomes **XCKN2118G11**.

Other cable entries

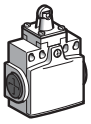
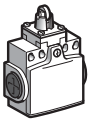
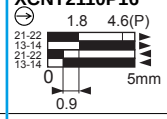
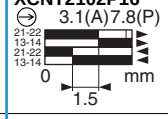
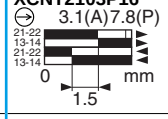
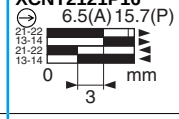
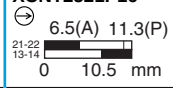
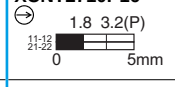
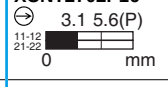
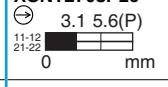
For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult our Customer Care Centre.

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
OsiSense XC Basic
Compact design, plastic, type 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				
 **2-pole NC + NO snap action**	**XCNT2110P16** 	**XCNT2102P16** 	**XCNT2103P16** 	**XCNT2121P16** 
 **2-pole N/C + N/O break before make, slow break**	**XCNT2510P16** 	**XCNT2502P16** 	**XCNT2503P16** 	**XCNT2521P16** 
 **2-pole NC + NC simultaneous, slow break**	**XCNT2710P16** 	**XCNT2702P16** 	**XCNT2703P16** 	**XCNT2721P16** 
Weight (kg)	0.085	0.085	0.085	0.090

Contact operation

■ *closed*
□ *open*

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

⊖ *NC contact with positive opening operation*

Characteristics

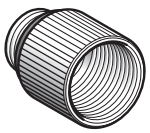
Switch actuation		On end	By 30° cam	
Type of actuation				
Maximum actuation speed		0.5 m/s	0.3 m/s	1 m/s
Mechanical durability (in millions of operating cycles)		10		
Minimum force or torque	For tripping	15 N	12 N	6 N
	For positive opening	30 N	20 N	10 N
Cable entry		2 entries tapped M16 x 1.5 mm for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



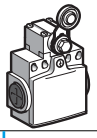
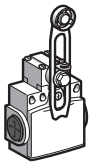
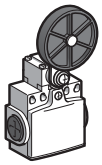
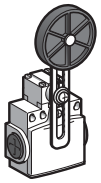
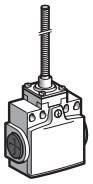
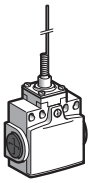
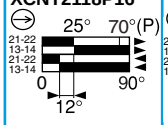
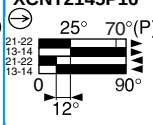
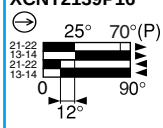
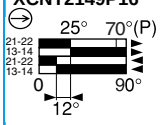
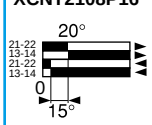
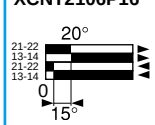
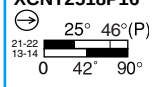
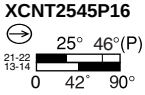
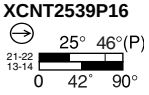
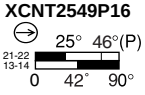
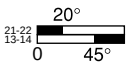
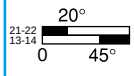
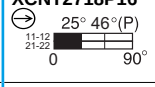
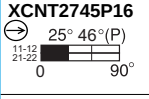
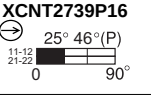
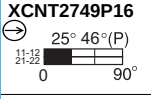
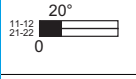
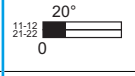
DE9RA1012

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

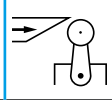
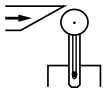
Other contacts

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
OsiSense XC Basic
Compact design, plastic, type 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						
 **2-pole NC + NO snap action**	**XCNT2118P16** 	**XCNT2145P16** 	**XCNT2139P16** 	**XCNT2149P16** 	**XCNT2108P16** 	**XCNT2106P16** 
 **2-pole N/C + N/O break before make, slow break**	**XCNT2518P16** 	**XCNT2545P16** 	**XCNT2539P16** 	**XCNT2549P16** 	**XCNT2508P16** 	**XCNT2506P16** 
 **2-pole NC + NC simultaneous, slow break**	**XCNT2718P16** 	**XCNT2745P16** 	**XCNT2739P16** 	**XCNT2749P16** 	**XCNT2708P16** 	**XCNT2706P16** 
Weight (kg)	0.105	0.120	0.120	0.120	0.100	0.090
Contact operation	■ *closed* □ *open*		*(A) (B) = cam displacement (P) = positive opening point*		⊖ *NC contact with positive opening operation*	

Characteristics

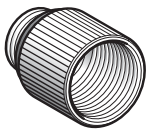
Switch actuation		By 30° cam	By any moving part
Type of actuation		 	
Maximum actuation speed		1.5 m/s	1 m/s (any direction)
Mechanical durability		10 million operating cycles	5 million operating cycles
Minimum force or torque	For tripping	0.1 N.m	0.13 N.m
	For positive opening	0.15 N.m	–
Cable entry		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: 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

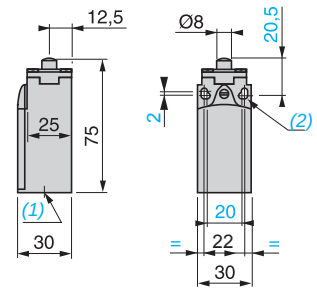
Other contacts

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.

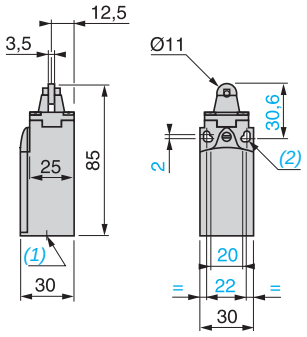
Limit switches
OsiSense XC Basic
Compact design, plastic, type XCKN
Complete switches with 1 cable entry

Dimensions

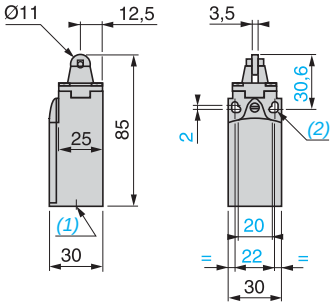
XCKN2●10P20



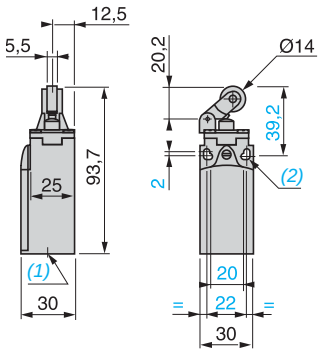
XCKN2●02P20



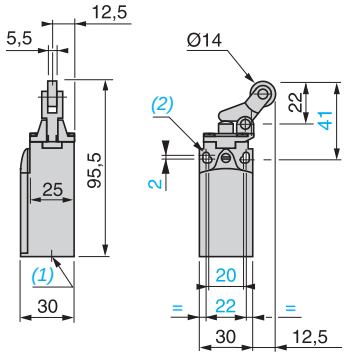
XCKN2●03P20



XCKN2●21P20

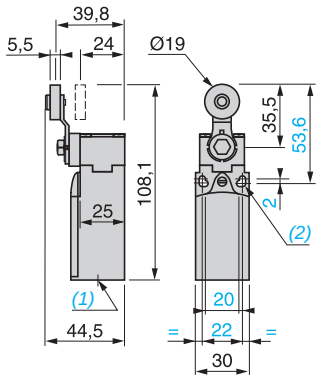


XCKN2●27P20

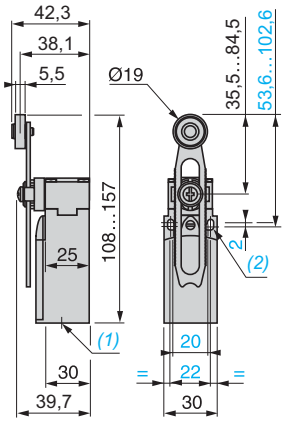


(1) 1 tapped entry for ISOM20 x 1.5 or Pg 11 cable gland.
(2) Ø: 2 elongated holes Ø 4.3 x 6.3 on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.

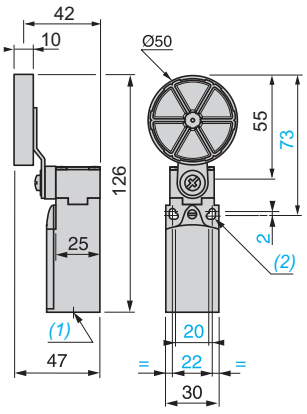
XCKN2●18P20



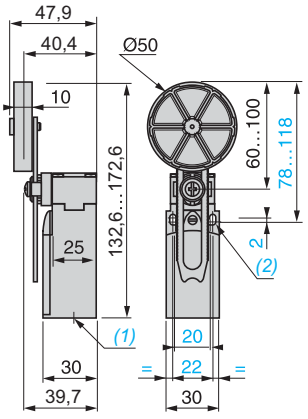
XCKN2●45P20



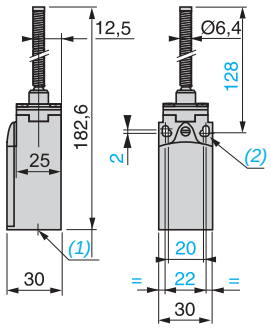
XCKN2●39P20



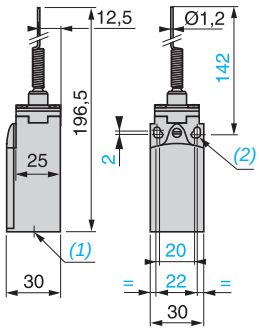
XCKN2●49P20



XCKN2●08P20



XCKN2●06P20

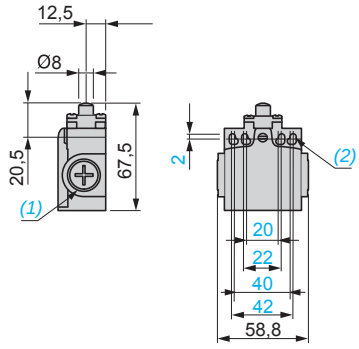


(1) 1 tapped entry for ISOM20 x 1.5 or Pg 11 cable gland.
(2) Ø: 2 elongated holes Ø 4.3 x 6.3 on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.

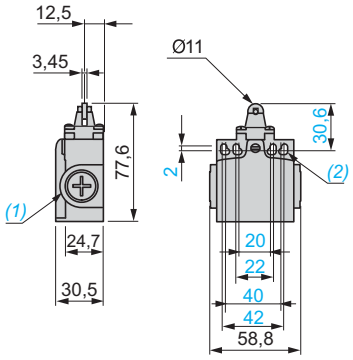
Limit switches
OsiSense XC Basic
Compact design, plastic, type XCNT
Complete switches with 2 cable entries

Dimensions

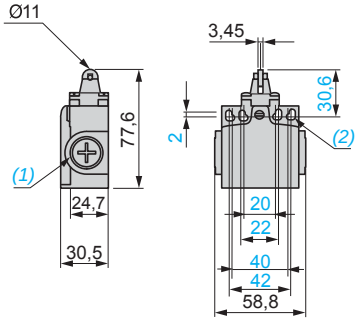
XCNT2●10P20



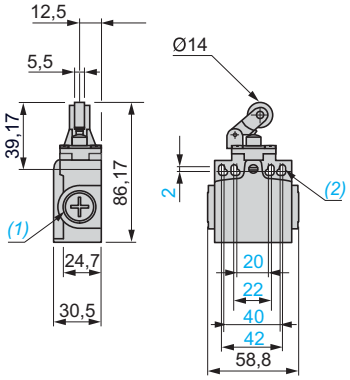
XCNT2●02P20



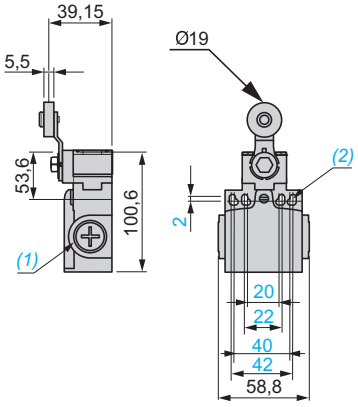
XCNT2●03P20



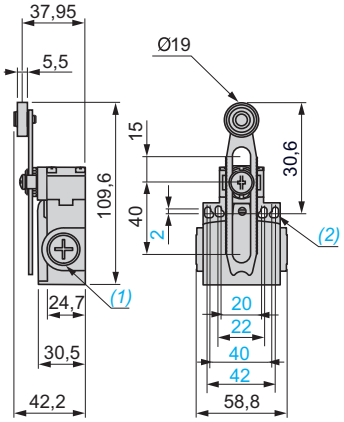
XCNT2●21P20



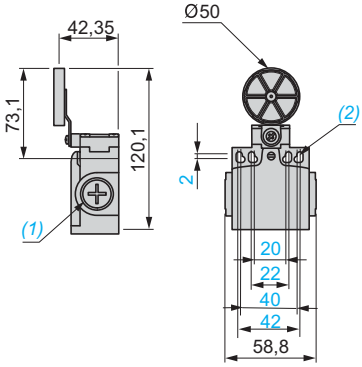
XCNT2●18P16



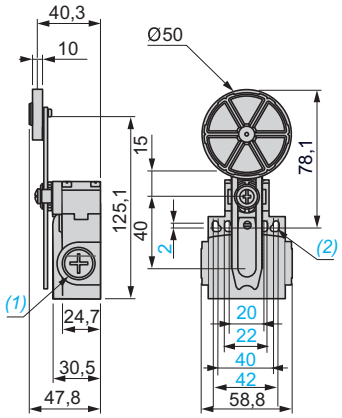
XCNT2●45P16



XCNT2●39P16

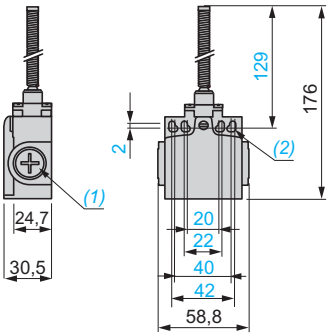


XCNT2●49P16

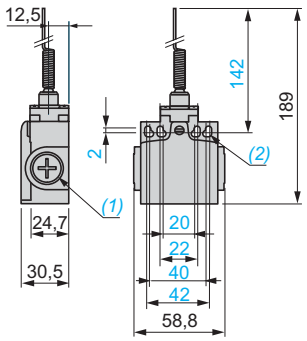


(1) 2 tapped entries for ISOM16 x 1.5 or Pg 11 cable gland.
(2) Ø: 4 elongated holes Ø 4.3 x 6.3

XCNT2●08P16



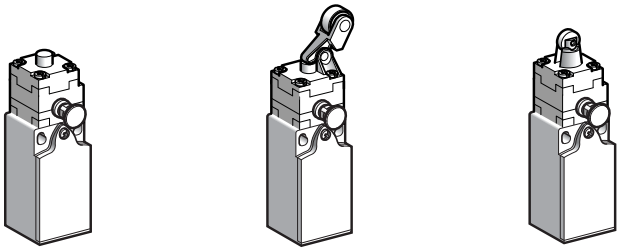
XCNT2●06P16



Limit switches
OsiSense XC Basic
Compact design, plastic, with reset knob, types XCNR and XCNTR

■ XCNR
with 1 cable entry

□ With head for linear movement (plunger)



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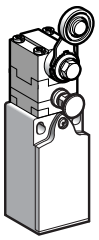
□ With head for rotary movement (lever)



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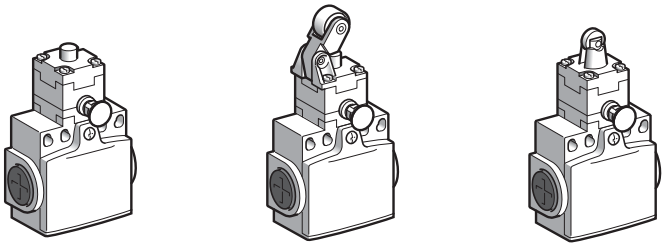
■ XCNTR
with 2 cable entries

□ With head for linear movement (plunger)



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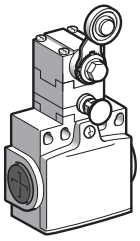
□ With head for rotary movement (lever)



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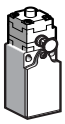
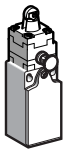
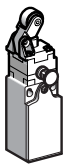
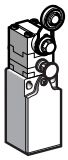
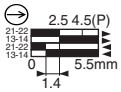
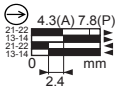
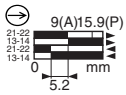
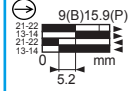
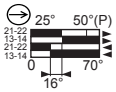
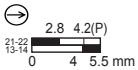
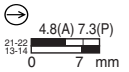
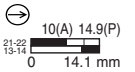
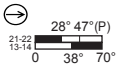
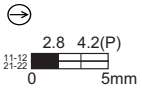
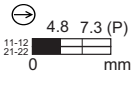
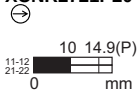
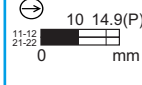
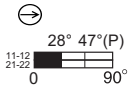
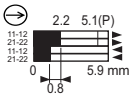
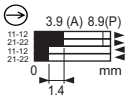
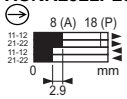
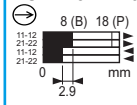
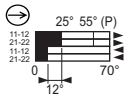
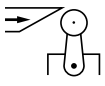
Limit switches
OsiSense XC Basic
Compact design, plastic, with reset knob,
types XCNR and XCNTR

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 (pending)
Protective treatment	Version	Standard: "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)
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms)
Electric shock protection		Class II conforming to IEC 61140 and NF C 20030
Degree of protection		**IP 65 conforming to IEC 60529; IK 04 conforming to EN 50102**
Cable entry		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)
Materials	Bodies	Plastic
	Heads	Plastic
Contact block characteristics		
Rated operational characteristics		~ 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
Rated insulation voltage	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
Rated impulse withstand voltage	2-pole contact	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
Positive operation		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
Short-circuit protection		10 A cartridge fuse type gG (gI)
Connection	Screw clamp terminals	Clamping capacity, min: 1 x 0.34 mm^2, max: 2 x 1.5 mm^2

Limit switches
OsiSense XC Basic
Compact design, plastic, with reset knob, type 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**	**XCNR2110P20** 	**XCNR2102P20** 	**XCNR2121P20** 	**XCNR2127P20** 	**XCNR2118P20** 
 **2-pole N/C + N/O break before make, slow break**	**XCNR2510P20** 	**XCNR2502P20** 	**XCNR2521P20** 	**XCNR2527P20** 	**XCNR2518P20** 
 **2-pole NC + NC simultaneous, slow break**	**XCNR2710P20** 	**XCNR2702P20** 	**XCNR2721P20** 	**XCNR2727P20** 	**XCNR2718P20** 
 **2-pole NC + NC snap action**	**XCNR2910P20** 	**XCNR2902P20** 	**XCNR2921P20** 	**XCNR2927P20** 	**XCNR2918P20** 
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

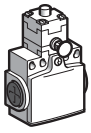
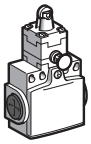
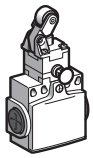
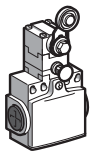
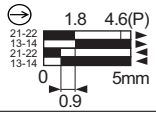
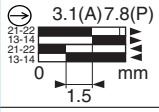
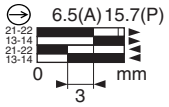
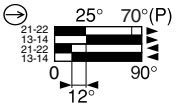
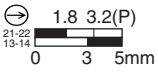
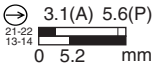
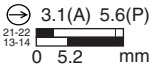
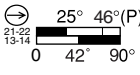
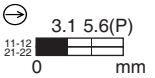
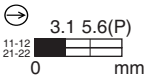
For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult our Customer Care Centre.

Other contacts

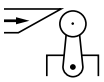
For complete switches with 2-pole contacts:
NC + NO make before break, slow break,
NO + NO simultaneous, slow break, please consult our Customer Care Centre.

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
OsiSense XC Basic
Compact design, plastic, with reset knob, type 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**	**XCNTR2110P16** 	**XCNTR2102P16** 	**XCNTR2121P16** 	**XCNTR2118P16** 
 **2-pole N/C + N/O break before make, slow break**	**XCNTR2510P16** 	**XCNTR2502P16** 	**XCNTR2521P16** 	**XCNTR2518P16** 
 **2-pole NC + NC simultaneous, slow break**	**XCNTR2710P16** 	**XCNTR2702P16** 	**XCNTR2721P16** 	**XCNTR2718P16** 
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

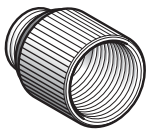
Switch actuation		On end	By 30° cam		
Type of actuation					
Maximum actuation speed		0.5 m/s	0.3 m/s	1 m/s	1.5 m/s
Mechanical durability		100 000 operating cycles			
Minimum force or torque	For tripping	15 N	12 N	6 N	0.1 N.m
	For positive opening	30 N	20 N	10 N	0.15 N.m
Cable entry		2 entries tapped 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

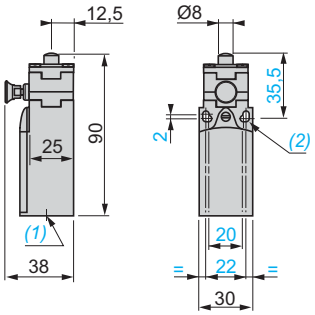
Other contacts

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.

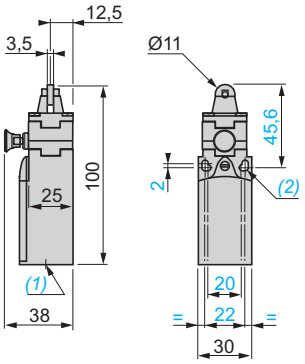
Limit switches
OsiSense XC Basic
Compact design, plastic, with reset knob, type XCNR
Complete switches with 1 cable entry

Dimensions

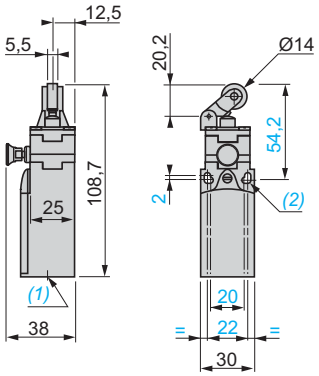
XCNR2●10P20



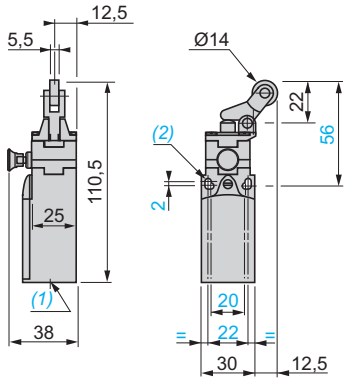
XCNR2●02P20



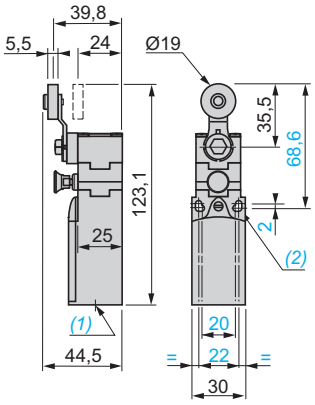
XCNR2●21P20



XCNR2●27P20



XCNR2●18P20

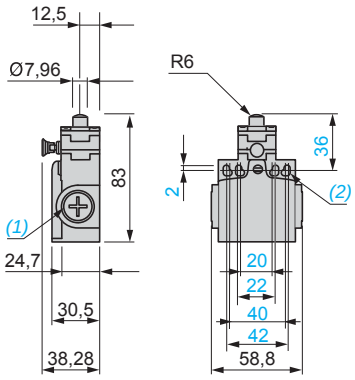


(1) 1 tapped entry for ISO M20 x 1.5 or Pg 11 cable gland.
(2) Ø: 2 elongated holes Ø 4.3 x 6.3 on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.

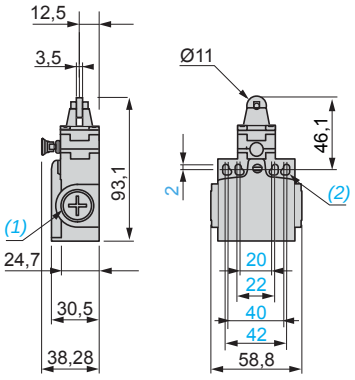
Limit switches
OsiSense XC Basic
Compact design, plastic, with reset knob, type XCNTR
Complete switches with 2 cable entries

Dimensions

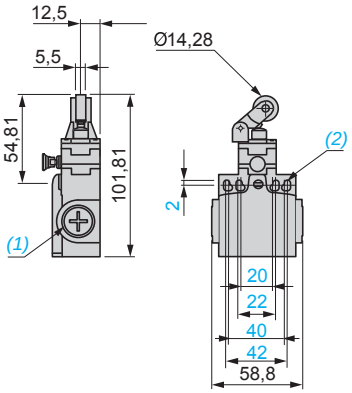
XCNTR2●10P16



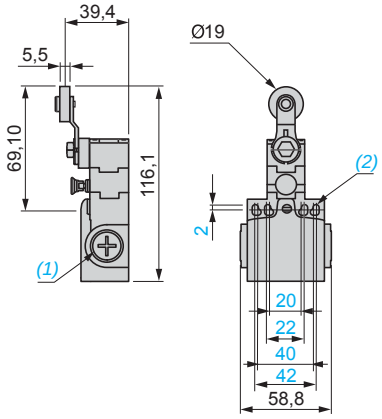
XCNTR2●02P16



XCNTR2●21P16



XCNTR2●18P16

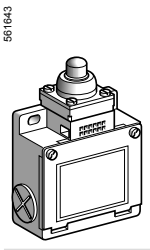


(1) 2 tapped entries for ISO M16 x 1.5 or Pg 11 cable gland.
(2) Ø: 4 elongated holes Ø 4.3 x 6.3.

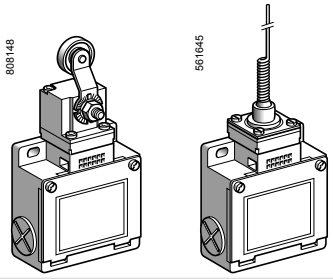
Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM, XCKL and XCKML

■ XCKM,
with 3 cable entries

□ With head for linear movement (plunger)



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



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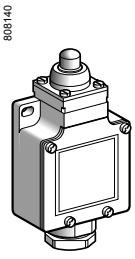
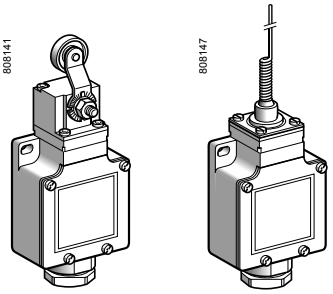
■ XCKL,
with 1 cable entry

□ With head for linear movement (plunger)



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



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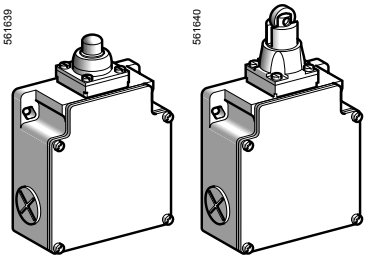
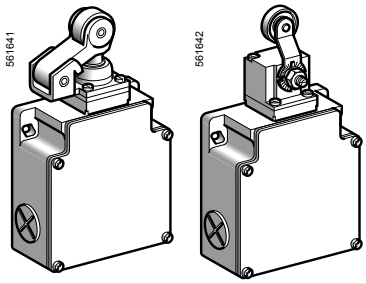
■ XCKML,
with 3 cable entries and 2 x 2-pole contacts

□ With head for linear movement (plunger)



□ With head for rotary movement (lever)



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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 EN 50102
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

Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM, XCKL and XCKML

Contact block characteristics

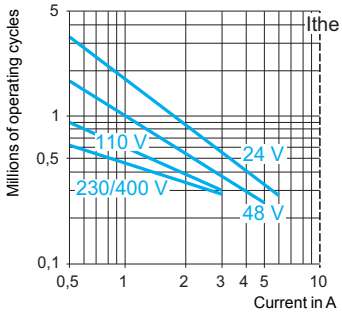
Rated operational characteristics	XE2●P	∼ AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A ⎓ DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3●P	∼ AC-15; B300 (Ue = 240 V, Ie = 1.5 A); Ithe = 6 A ⎓ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 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 mm², max: 2 x 1.5 mm²
	XE2NP21●1	Clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm²
	XESP2151L and XENP2151L	Clamping capacity, min: 1 x 0.34 mm², max: 2 x 1.5 mm² or 1 x 2.5 mm²
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm², max: 1 x 1 mm² or 2 x 0.75 mm²
Minimum actuation speed		**XE2SP21●1, XESP2151L** and **XE3SP**: 0.01 m/minute
		XE2NP21●1, XENP2151L and **XE3NP**: 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

XE2SP21●1, XE2SP2141, XESP2151L

AC supply
50/60 Hz ∼
⎓ inductive circuit

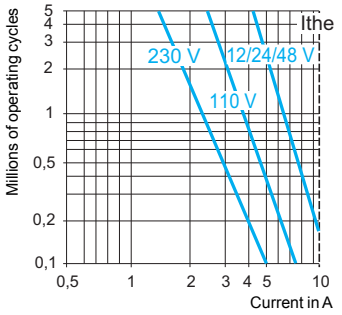


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	10	7	4

XE2NP21●1, XENP2151L



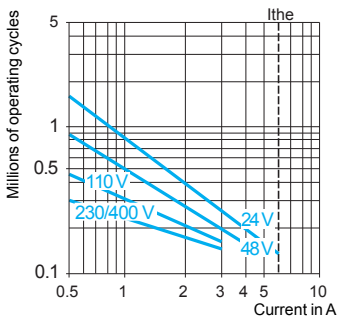
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	13	9	7

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

XE3SP●●●●

AC supply
50/60 Hz ∼
⎓ inductive circuit

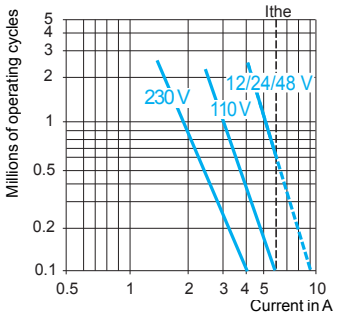


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	3	2	1

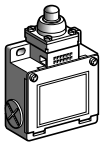
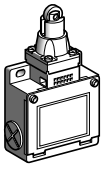
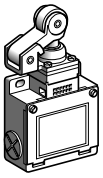
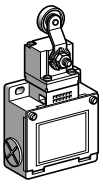
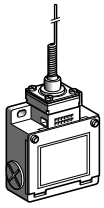
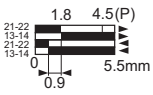
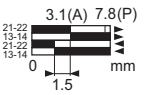
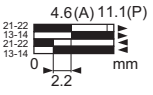
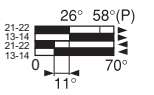
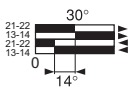
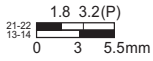
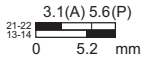
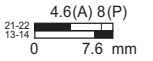
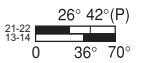
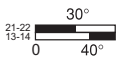
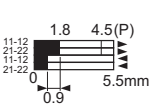
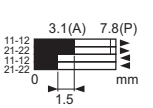
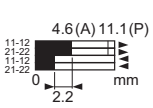
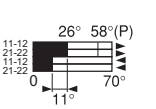
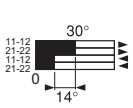
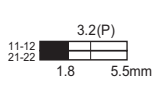
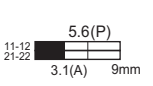
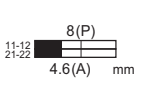
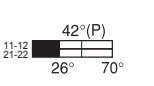
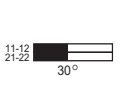
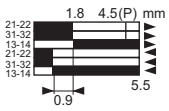
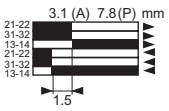
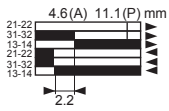
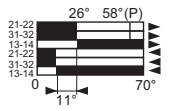
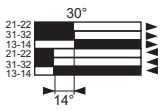
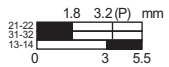
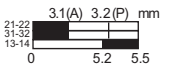
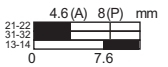
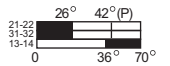
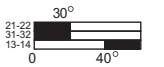
XE3NP●●●●



Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	4	3	2

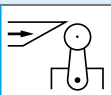
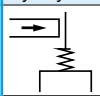
Limit switches
OsiSense XC Standard, Classic format
Metal, type XCKM
Complete switches with 3 cable entries

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)*
References of complete switches with 3 ISO M20 x 1.5 cable entries *(3)*					
2-pole NC + NO snap action (XE2SP2151)	 **XCKM110H29** 	 **XCKM102H29**	 **XCKM121H29**	 **XCKM115H29**	 **XCKM106H29**
2-pole NC + NO break before make, slow break (XE2NP2151)	 **XCKM510H29** 	 **XCKM502H29**	 **XCKM521H29**	 **XCKM515H29**	 **XCKM506H29**
2-pole NC + NC snap action (XE2SP2141)	 **ZCKM9H29 + ZCKD10** 	 **ZCKM9H29 + ZCKD02**	 **ZCKM9H29 + ZCKD21**	 **ZCKM9H29 + ZCKD15**	 **ZCKM9H29 + ZCKD06**
2-pole NC + NC simultaneous, slow break (XE2NP2141)	 **ZCKM7H29 + ZCKD10** 	 **ZCKM7H29 + ZCKD02**	 **ZCKM7H29 + ZCKD21**	 **ZCKM7H29 + ZCKD15**	 **ZCKM7H29 + ZCKD06**
3-pole NC + NC + NO snap action (XE3SP2141)	 **ZCKMD39H29 + ZCKD10** 	 **ZCKMD39H29 + ZCKD02**	 **ZCKMD39H29 + ZCKD21**	 **ZCKMD39H29 + ZCKD15**	 **ZCKMD39H29 + ZCKD06**
3-pole NC + NC + NO break before make, slow break (XE3NP2141)	 **ZCKMD37H29 + ZCKD10** 	 **ZCKMD37H29 + ZCKD02**	 **ZCKMD37H29 + ZCKD21**	 **ZCKMD37H29 + ZCKD15**	 **ZCKMD37H29 + ZCKD06**
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 switches with 3 Pg 11 cable entries

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

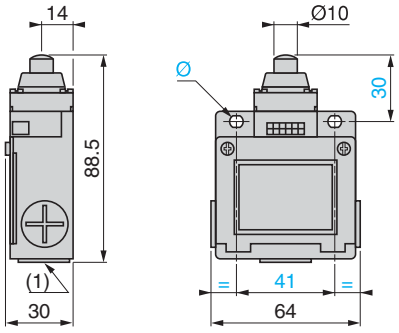
Characteristics

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	12 N	8 N	0.1 N.m	0.13 N.m
	For positive opening	45 N	36 N	24 N	0.25 N.m	–
Cable entry		3 entries tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm				

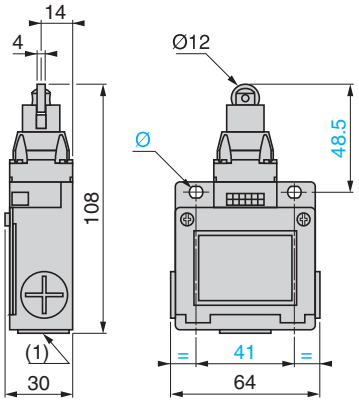
(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Value taken with actuation by moving part at 100 mm from the fixing.
(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.
(4) Limited to 15 million operating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

Limit switches
OsiSense XC Standard, Classic format
Metal, type XCKM
Complete switches with 3 cable entries

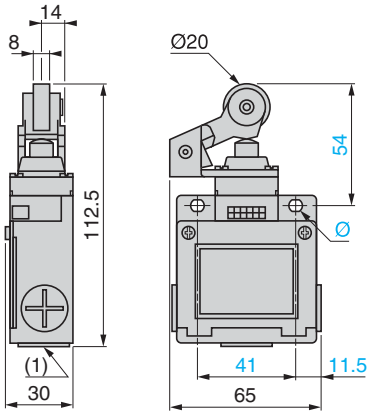
XCKM●10
ZCKMD3● + ZCKD10



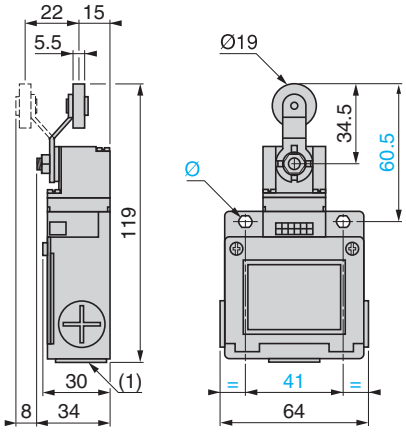
XCKM●02
ZCKMD3● + ZCKD02



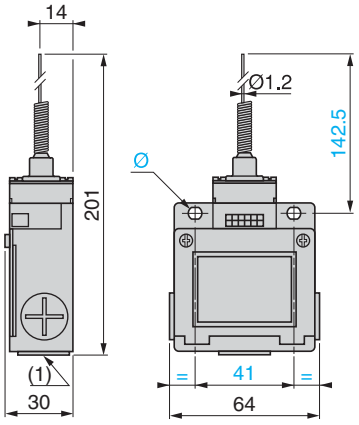
XCKM●21
ZCKMD3● + ZCKD21



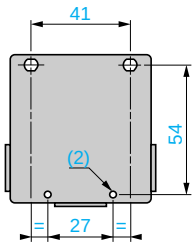
XCKM●15
ZCKMD3● + ZCKD15



XCKM●06
ZCKMD3● + ZCKD06

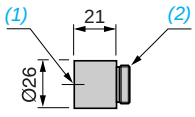


Rear view XCKM●●●, ZCKM●, ZCKMD3●



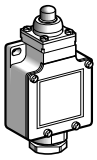
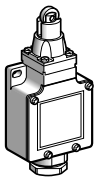
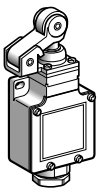
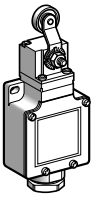
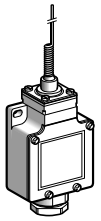
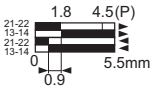
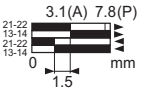
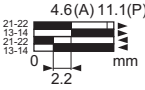
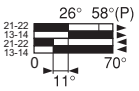
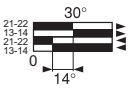
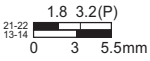
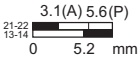
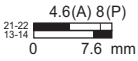
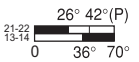
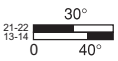
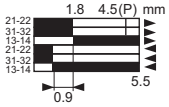
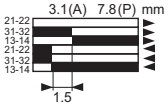
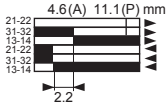
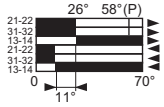
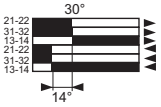
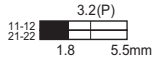
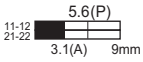
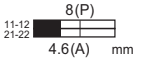
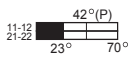
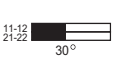
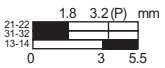
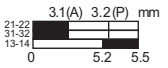
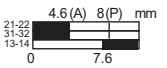
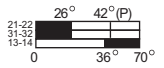
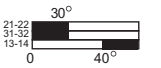
(1) 3 tapped entries for ISO M20 x 1.5 or Pg 11 cable gland or with 1/2" NPT conduit adaptor DE9RA1012.
(2) 2 x Ø 4 H 11, depth 10.
Ø: 2 elongated holes Ø 5.2 x 6.2

Adaptor for 1/2" NPT conduit
DE9RA1012

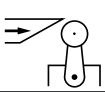


(1) Tapped entry for 1/2" NPT conduit.
(2) Pg 11 threaded sleeve.

Limit switches
OsiSense XC Standard, Classic format
Metal, type XCKL
Complete switches 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) 	**XCKL110** 	**XCKL102** 	**XCKL121** 	**XCKL115** 	**XCKL106** 
2-pole NC + NO break before make, slow break (XE2NP2151) 	**XCKL510** 	**XCKL502** 	**XCKL521** 	**XCKL515** 	**XCKL506** 
3-pole NC + NC + NO snap action (XE3SP2141) 	**ZCKLD39 + ZCKD10** 	**ZCKLD39 + ZCKD02** 	**ZCKLD39 + ZCKD21** 	**ZCKLD39 + ZCKD15** 	**ZCKLD39 + ZCKD06** 
2-pole NC + NC simultaneous, slow break (XE2NP2141) 	**ZCKL7 + ZCKD10** 	**ZCKL7 + ZCKD02** 	**ZCKL7 + ZCKD21** 	**ZCKL7+ ZCKD15** 	**ZCKL7 + ZCKD06** 
3-pole NC + NC + NO break before make, slow break (XE3NP2141) 	**ZCKLD37 + ZCKD10** 	**ZCKLD37 + ZCKD02** 	**ZCKLD37 + ZCKD21** 	**ZCKLD37 + ZCKD15** 	**ZCKLD37 + ZCKD06** 
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*	

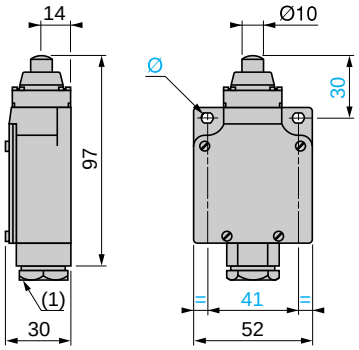
Characteristics

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	15 N	12 N	8 N	0.1 N.m	0.13 N.m
	For positive opening	45 N	36 N	24 N	0.25 N.m	–
Cable entry		1 entry incorporating metal cable gland. Clamping capacity 6 to 13.5 mm.				

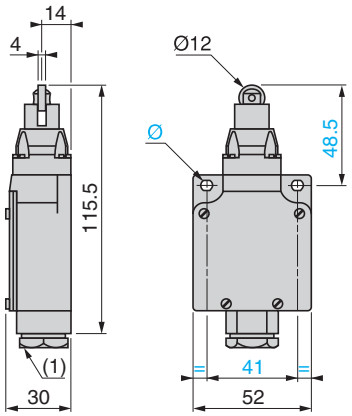
(1) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(2) Value taken with actuation by moving part at 100 mm from the fixing.
(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.
(4) Limited to 15 million operating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

Limit switches
OsiSense XC Standard, Classic format
Metal, type XCKL
Complete switches incorporating Pg 13.5 cable gland

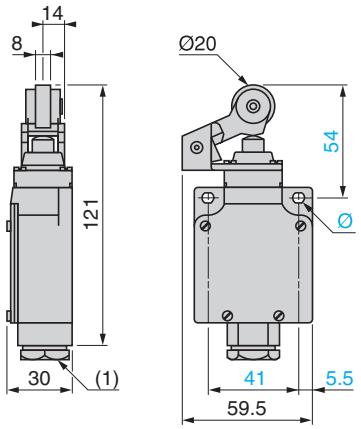
XCKL●10
ZCKL● + ZCKD10
ZCKLD3● + ZCKD10



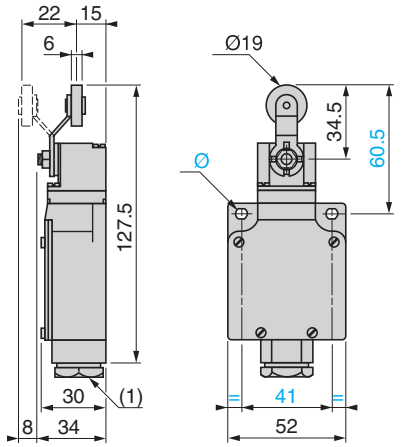
XCKL●02
ZCKL3● + ZCKD02
ZCKLD3● + ZCKD02



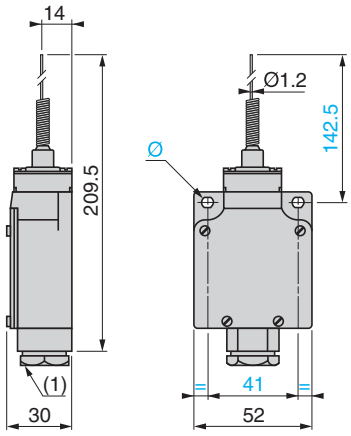
XCKL●21
ZCKL● + ZCKD21
ZCKLD3● + ZCKD21



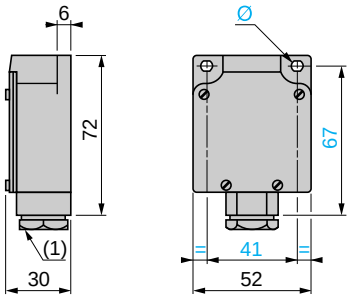
XCKL●15
ZCKL● + ZCKD15
ZCKLD3● + ZCKD15



XCKL●06
ZCKL● + ZCKD06
ZCKLD3● + ZCKD06

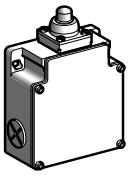
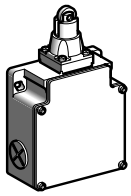
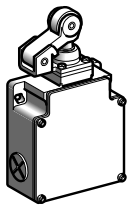
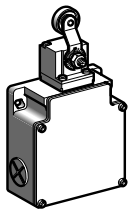
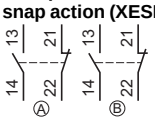
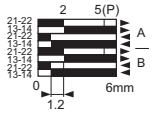
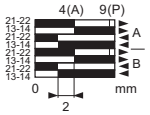
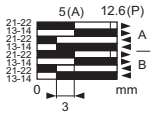
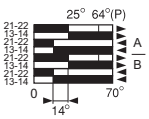
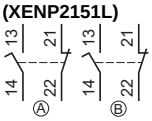
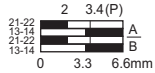
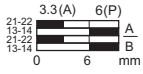
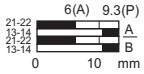
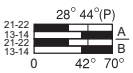
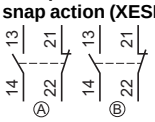
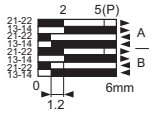
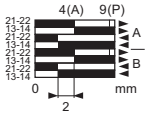
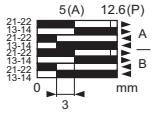
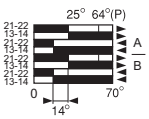
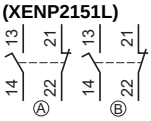
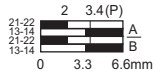
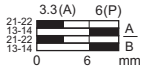
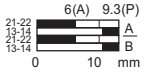
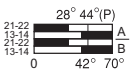


Body fixings

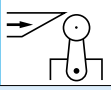


(1) Incorporated Pg 13.5 cable gland
Ø: 2 elongated holes Ø 5.2 x 6.2

Limit switches
OsiSense XC Standard, Classic format
Metal, 2 x 2-pole contacts, type XCKML
Complete switches with 3 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 *(1)*
References of complete switches with 3 ISO M20 x 1.5 cable entries *(2)*				
2 x 2-pole NC + NO snap action (XESP2151L) 	**XCKML110H29** ⊖ 	**XCKML102H29** ⊖ 	**XCKML121H29** ⊖ 	**XCKML115H29** ⊖ 
2 x 2-pole NC + NO break before make, slow break (XENP2151L) 	**XCKML510H29** ⊖ 	**XCKML502H29** ⊖ 	**XCKML521H29** ⊖ 	**XCKML515H29** ⊖ 
References of complete switches with 3 entries tapped for n° 13 cable gland *(2)*				
2 x 2-pole NC + NO snap action (XESP2151L) 	**XCKML110** ⊖ 	**XCKML102** ⊖ 	**XCKML121** ⊖ 	**XCKML115** ⊖ 
2 x 2-pole NC + NO break before make, slow break (XENP2151L) 	**XCKML510** ⊖ 	**XCKML502** ⊖ 	**XCKML521** ⊖ 	**XCKML515** ⊖ 
Weight (kg)	0.400	0.405	0.450	0.430
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		
Type of actuation					
Maximum actuation speed		0.5 m/s		1.5 m/s	
Mechanical durability		3 million operating cycles			
Minimum force	For tripping	15 N	12 N	8 N	0.2 N.m
	For positive opening	60 N	50 N	50 N	0.5 N.m
Cable entry		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 type XCKML are the same as those for types XCKM and XCKL (see heads **ZCKD10**, **ZCKD02**, **ZCKD21** and **ZCKD15** on page 82).*

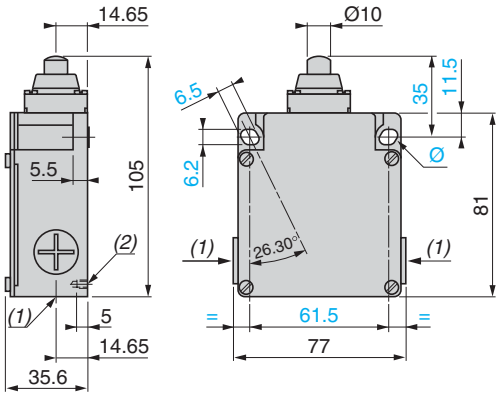
Limit switches

OsiSense XC Standard, Classic format

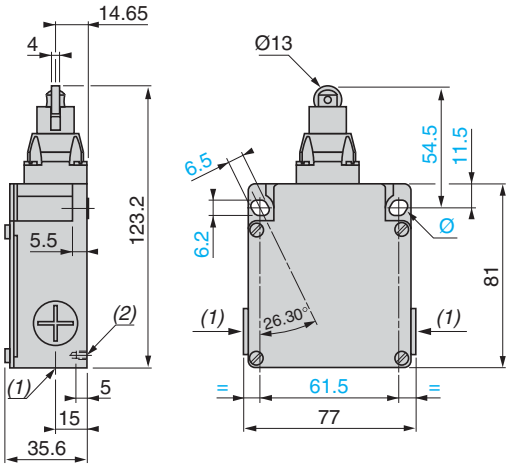
Metal, 2 x 2-pole contacts, type XCKML

Complete switches with 3 cable entries

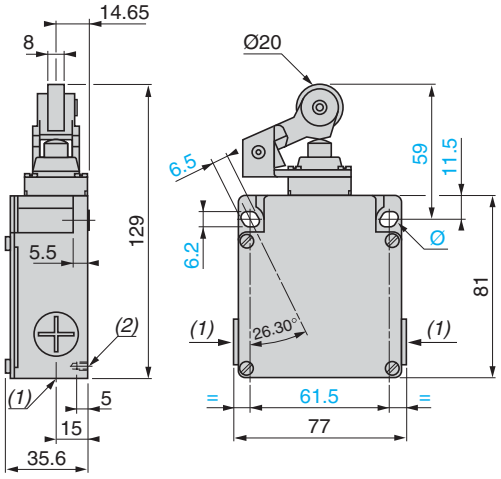
XCKML110H29, XCKML510H29, XCKML110, XCKML510



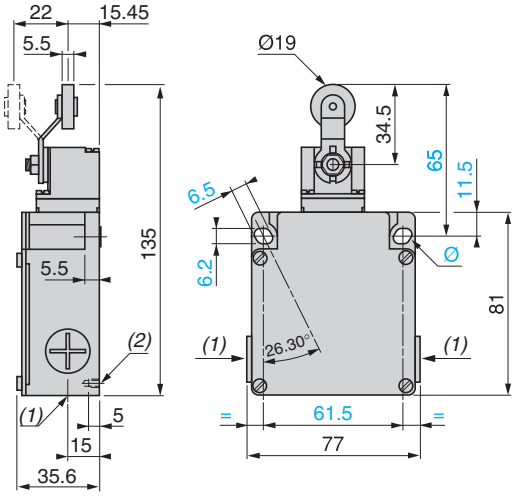
XCKML102H29, XCKML502H29, XCKML102, XCKML502



XCKML121H29, XCKML521H29, XCKML121, XCKML521

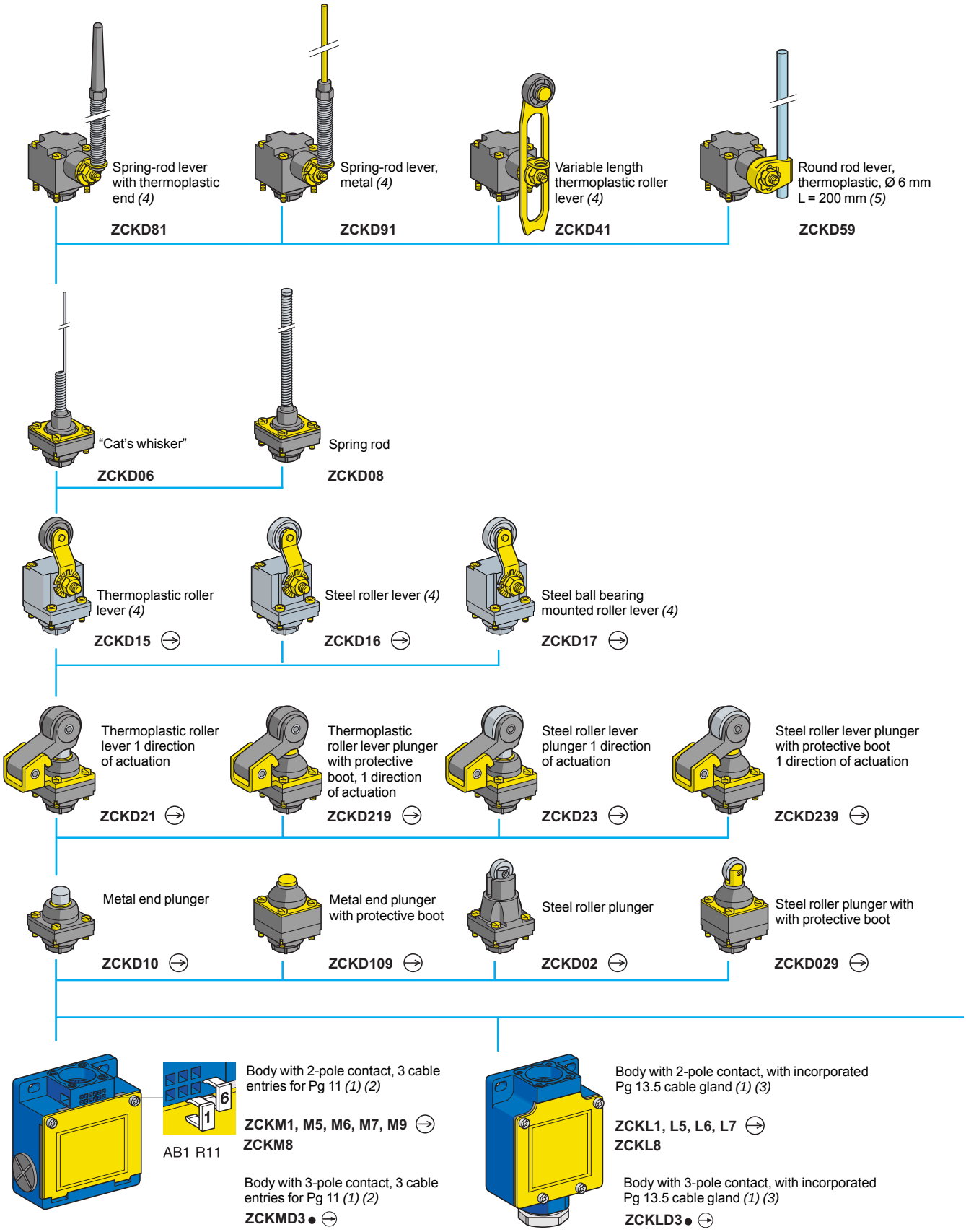


XCKML115H29, XCKML515H29, XCKML115, XCKML515



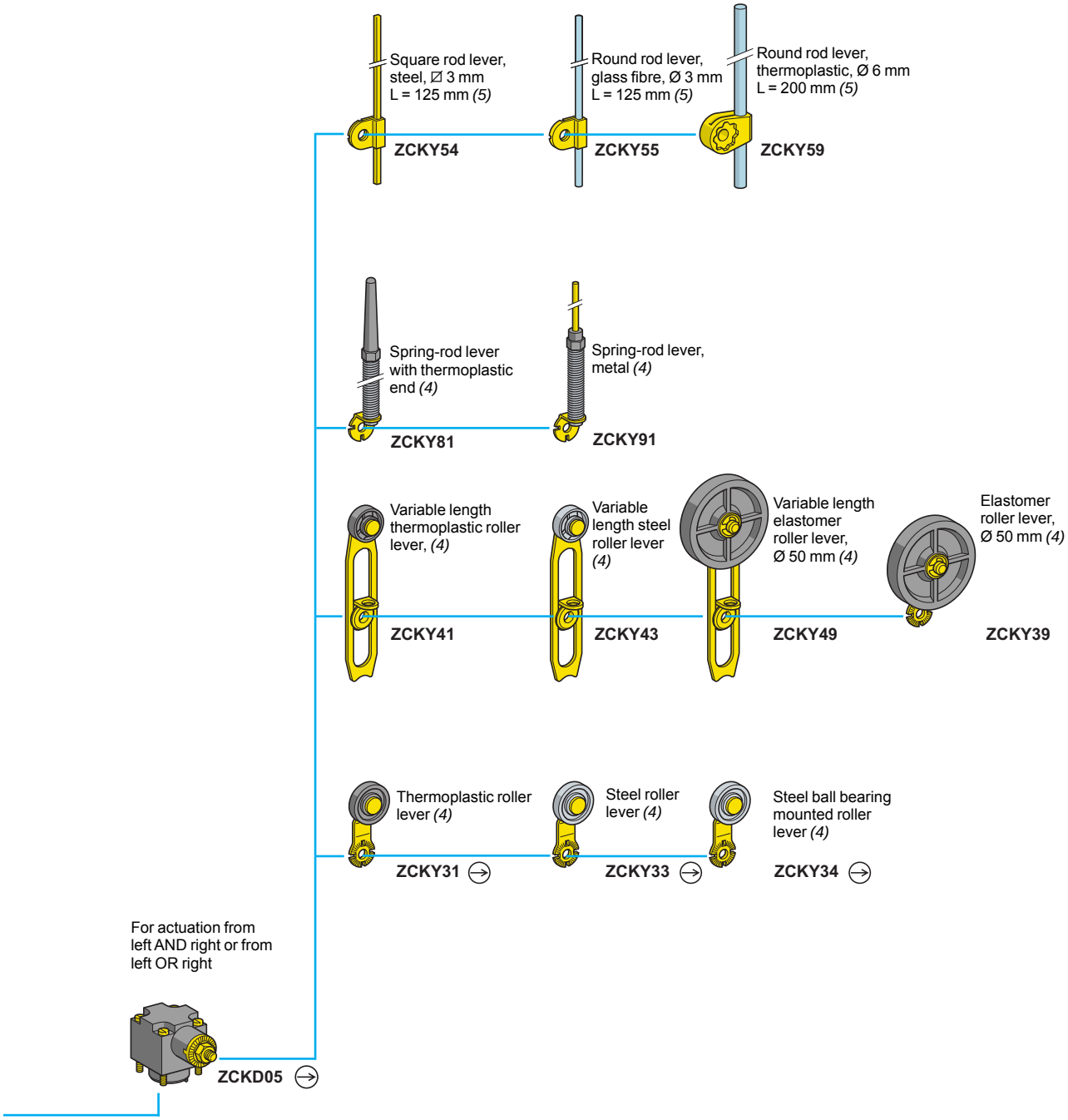
*(1) **XCKML●●●H29**: 3 entries tapped M20 x 1.5. **XCKML●●●**: 3 tapped entries for n° 13 cable gland.*
(2) 2 centring holes Ø 3.9 ± 0.2, for cover fixing holes alignment.
Ø 2 elongated holes 6.2 x 6.5, inclined at 26° 30' to the vertical axis, for M5 screws.

Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Variable composition



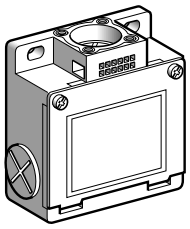
(1) For further information, see page 84.
*(2) For 3 cable entries tapped ISO M20 x 1.5, add **H29** to the reference. Example: ZCKM1 becomes **ZCKM1H29**.*
*For one cable entry with 1/2" NPT adaptor, add **H7** to the reference. Example: ZCKM1 becomes **ZCKM1H7**.*
*(3) For one cable entry tapped 1/2" NPT, add **H7** to the reference. Example: ZCKL1 becomes **ZCKL1H7**.*

Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Variable composition

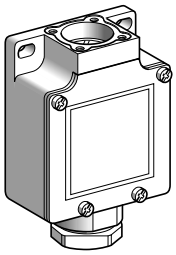


⊖: head assuring positive opening operation.
(4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(5) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Adaptable sub-assemblies



ZCKM●



ZCKL●

Bodies with 2-pole contact

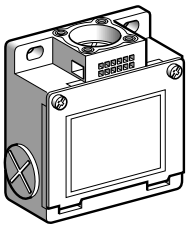
With contact block	Scheme	Positive operation *(1)*	Cable entry	Reference	Weight kg
For limit switches type XCKM					
NC + NO snap action (XE2SP2151)		⊖	Pg 11	**ZCKM1**	0.210
			ISO M20 x 1.5	**ZCKM1H29**	0.210
			1/2" NPT *(2)*	**ZCKM1H7**	0.210
NC + NO break before make, slow break (XE2NP2151)		⊖	Pg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

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

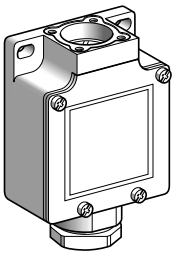
(2) 3 tapped entries, one with metal adaptor for 1/2" NPT (USASB2-1) conduit.

(3) Pg 13.5 cable gland included with switch.

Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Adaptable sub-assemblies

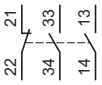
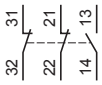
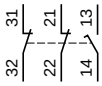
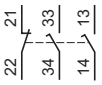
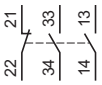
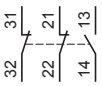
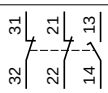
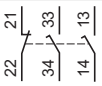


ZCKMD3●



ZCKLD3●

Bodies with 3-pole contact

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

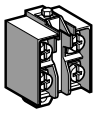
(1) ⊖ : NC contact with positive opening operation.

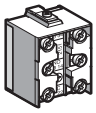
(2) 3 tapped entries, one with metal adaptor for 1/2" NPT (USASB2-1) conduit.

(3) Pg 13.5 cable gland included with switch.

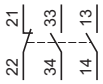
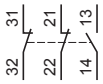
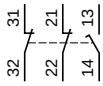
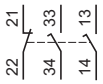
Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Adaptable sub-assemblies


XE2SP21●1


XE2NP21●1


XE3●P21●●

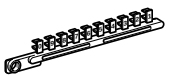
Contact blocks

Type of contact	Scheme	For bodies	Positive operation (1)	Reference	Weight kg
2-pole contact					
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
3-pole contact					
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 type XCKM


XCKZ09


AB1R11

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

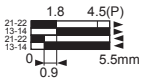
OsiSense XC Standard, Classic format

Metal, types XCKM and XCKL

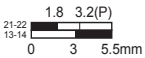
Adaptable sub-assemblies

Heads ZCKD10, D109 with body

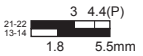
ZCKM1, L1



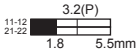
ZCKM5, L5



ZCKM6, L6

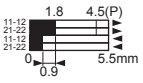


ZCKM7, L7

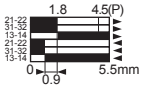


ZCKM8, L8

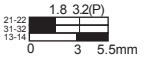
ZCKM9



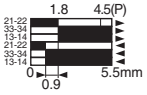
ZCKMD39, LD39



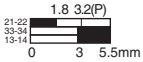
ZCKMD37, LD37



ZCKMD31, LD31

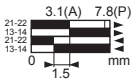


ZCKMD35, LD35

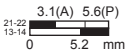


Heads ZCKD02, D029 with body

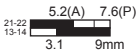
ZCKM1, L1



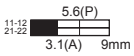
ZCKM5, L5



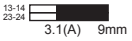
ZCKM6, L6



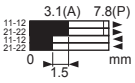
ZCKM7, L7



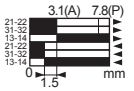
ZCKM8, L8



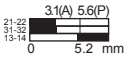
ZCKM9



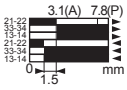
ZCKMD39, LD39



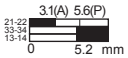
ZCKMD37, LD37



ZCKMD31, LD31

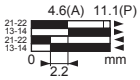


ZCKMD35, LD35

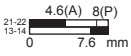


Heads ZCKD21, D23, D219, D239 with body

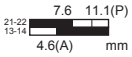
ZCKM1, L1



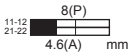
ZCKM5, L5



ZCKM6, L6

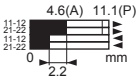


ZCKM7, L7

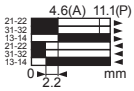


ZCKM8, L8

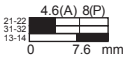
ZCKM9



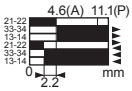
ZCKMD39, LD39



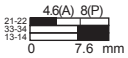
ZCKMD37, LD37



ZCKMD31, LD31

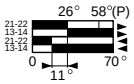


ZCKMD35, LD35

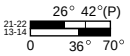


Heads ZCKD15, D16, D17 with body

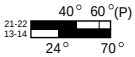
ZCKM1, L1



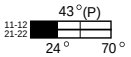
ZCKM5, L5



ZCKM6, L6

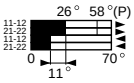


ZCKM7, L7

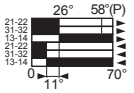


ZCKM8, L8

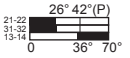
ZCKM9



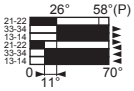
ZCKMD39, LD39



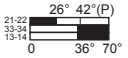
ZCKMD37, LD37



ZCKMD31, LD31

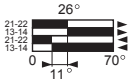


ZCKMD35, LD35

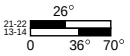


Heads ZCKD41, D59, D81, D91 with body

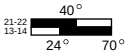
ZCKM1, L1



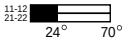
ZCKM5, L5



ZCKM6, L6

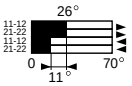


ZCKM7, L7

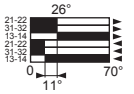


ZCKM8, L8

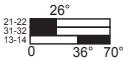
ZCKM9



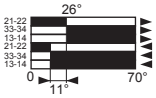
ZCKMD39, LD39



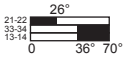
ZCKMD37, LD37



ZCKMD31, LD31

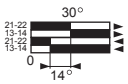


ZCKMD35, LD35

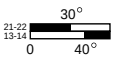


Heads ZCKD06, D08 with body

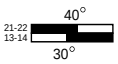
ZCKM1, L1



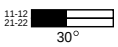
ZCKM5, L5



ZCKM6, L6

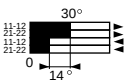


ZCKM7, L7

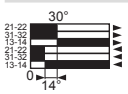


ZCKM8, L8

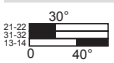
ZCKM9



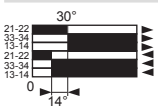
ZCKMD39, LD39



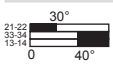
ZCKMD37, LD37



ZCKMD31, LD31



ZCKMD35, LD35



Contact operation

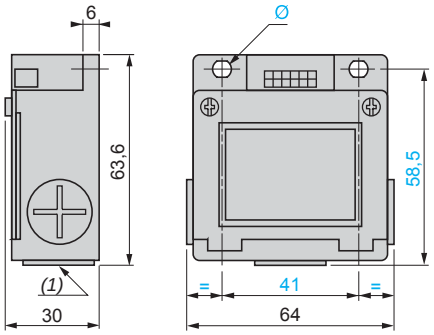
closed
open

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

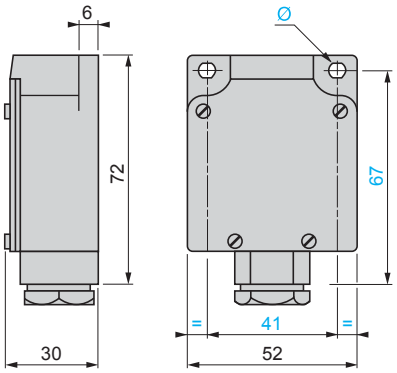
Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Adaptable sub-assemblies

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

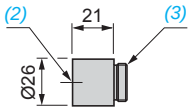


ZCKL1, L5, L6, L7, L8, LD3● (with incorporated Pg 13.5 cable gland)
ZCKL1H7, L5H7, L6H7, L7H7, L8H7, LD3●H7 (with 1/2" NPT cable entry)



Adaptor for 1/2" NPT conduit

DE9RA1012

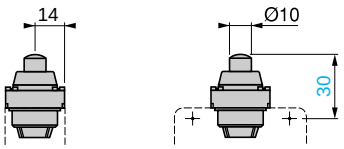


(1) 3 tapped entries for ISO M20 x 1.5 or Pg 11 cable gland.
Ø: 2 elongated holes Ø 5.2 x 6.2
(2) Tapped entry for 1/2" NPT conduit.
(3) Pg 11 threaded sleeve.

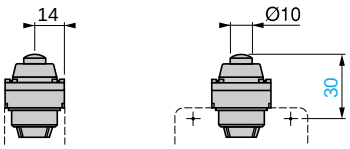
Limit switches
OsiSense XC Standard, Classic format
Metal, types XCKM and XCKL
Adaptable sub-assemblies

Plunger heads

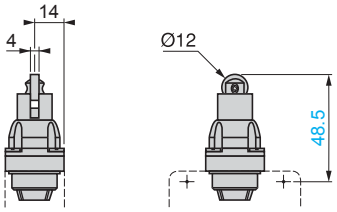
ZCKD10



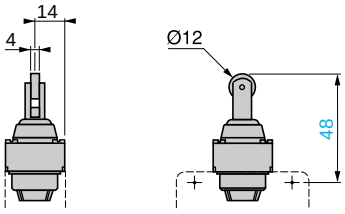
ZCKD109



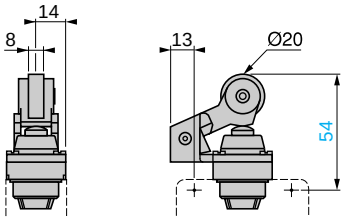
ZCKD02



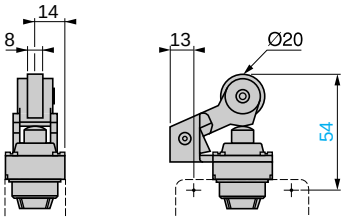
ZCKD029



ZCKD21, D23

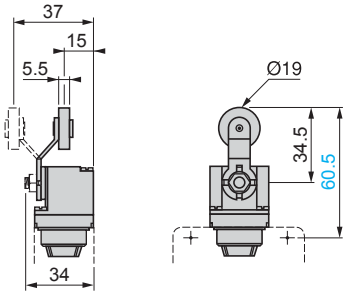


ZCKD219, D239

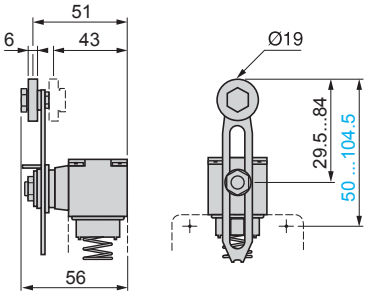


Rotary heads

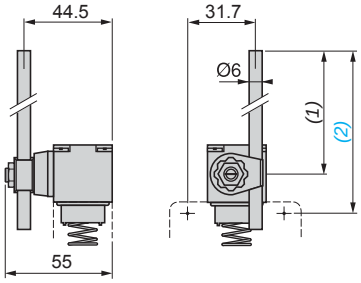
ZCKD15, D16, D17



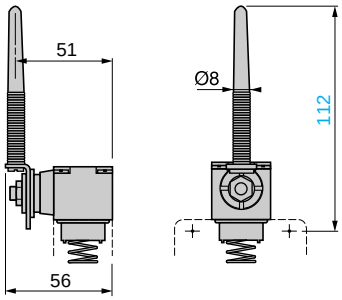
ZCKD41



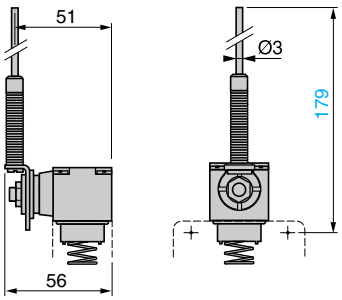
ZCKD59



ZCKD81

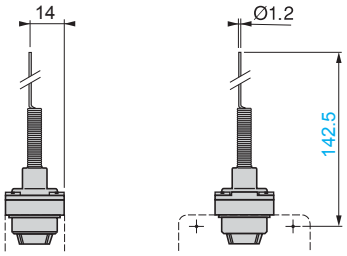


ZCKD91

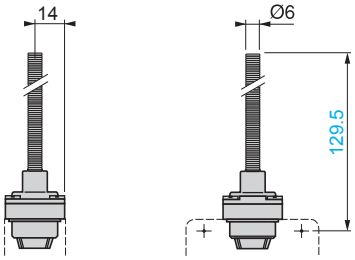


Multi-directional heads

ZCKD06



ZCKD08



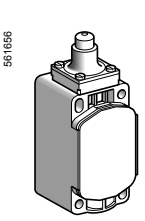
(1) 190 max.
(2) 215.5 max.

Note: *operating lever spindle threaded M6.*

Limit switches
OsiSense XC Standard, format EN 50041
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041

■ XCKS
with 1 cable entry

□ With head for linear movement (plunger)



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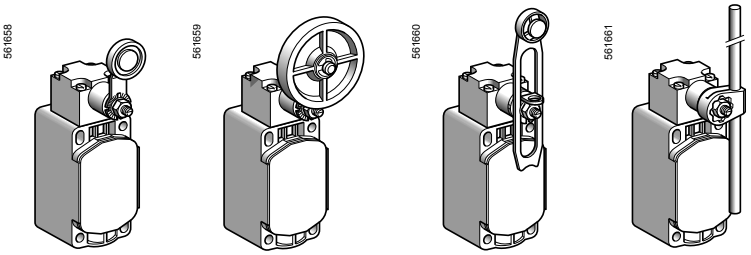
□ With head for rotary movement (lever)



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Environment characteristics

Conformity to standards	Products	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	Version	Standard: “TC” and “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 II conforming to IEC 61140 and NF C 20-030
Degree of protection		IP 65 conforming to IEC 60529; IK 03 conforming to EN 50102
Repeat accuracy		0.05 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry	Depending on model	Tapped entry for n° 13 cable gland or tapped ISO M20 x 1.5
Materials		Bodies and heads: plastic

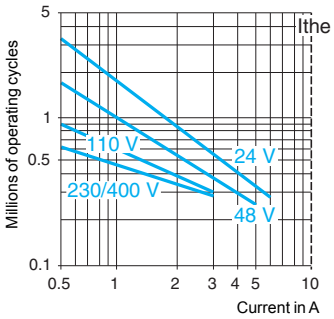
Limit switches
OsiSense XC Standard, format EN 50041
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041

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 mm², max: 2 x 1.5 mm²
	XE2NP21●1	Clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm²
	XESP3021	Clamping capacity, min: 1 x 0.75 mm², max: 2 x 1.5 mm²
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm², max: 1 x 1 mm² or 2 x 0.75 mm²
Minimum actuation speed		**XE2SP21●1**, **XES P3021** and **XE3S P**: 0.01 m/minute
		XE2NP21●1 and **XE3N P**: 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

XE2SP21●1, XE2SP2141

AC supply 50/60 Hz ∼
inductive circuit

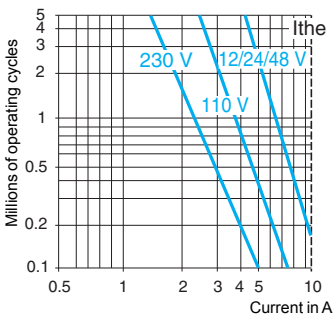


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	10	7	4

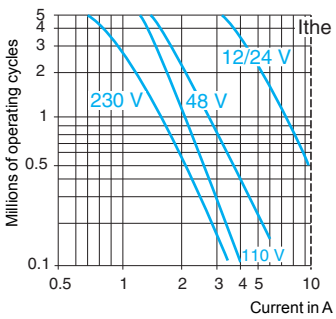
XE2NP21●1



Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	13	9	7

XESP3021



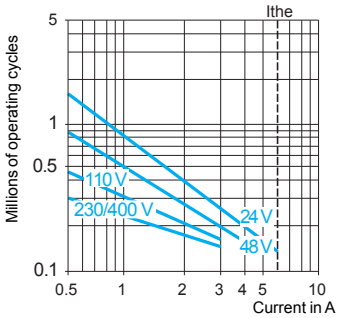
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	10	7	4

For XE2S P●151 on ∼ or ⎓, NC and NO contacts simultaneously loaded to the values shown with reverse polarity.

XE3SP●●●●

AC supply 50/60 Hz ∼
inductive circuit

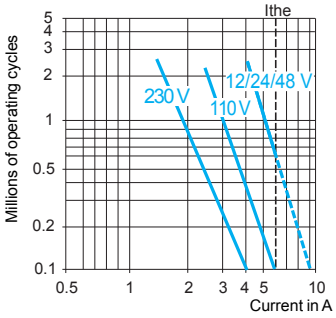


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	3	2	1

XE3NP●●●●



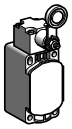
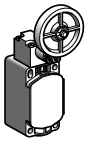
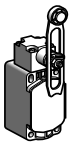
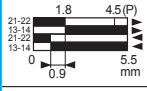
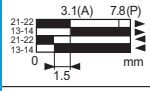
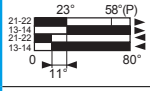
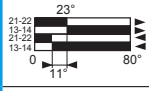
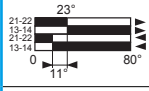
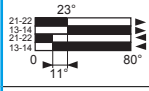
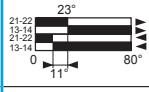
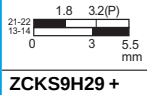
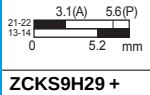
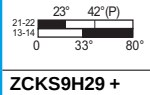
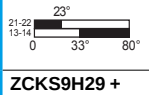
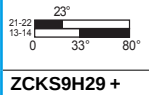
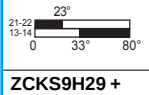
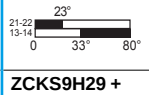
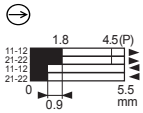
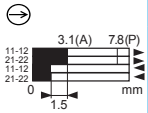
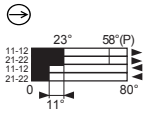
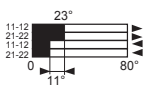
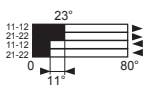
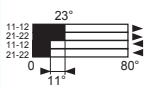
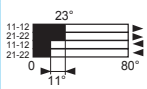
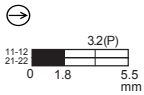
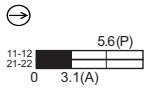
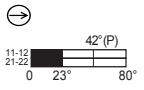
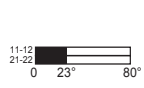
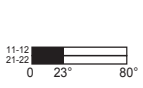
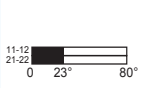
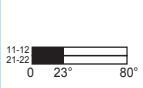
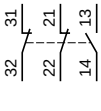
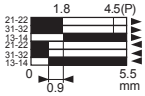
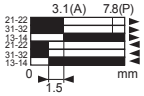
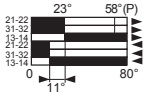
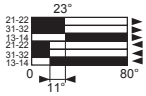
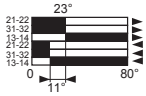
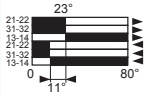
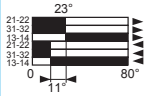
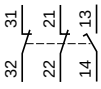
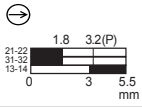
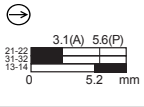
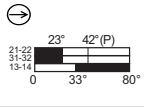
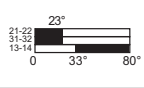
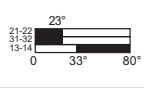
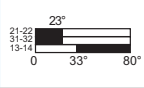
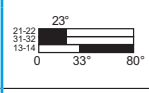
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	4	3	2

Limit switches

OsiSense XC Standard, format EN 50041

Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Complete switches with 1 cable entry

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body)				
	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)*	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)*
References of complete switches with 1 ISO M20 x 1.5 cable entry *(3)*							
 **2-pole NC + NO snap action (XE2SP2151)**	**XCKS101H29** 	**XCKS102H29** 	**XCKS131H29** 	**XCKS139H29** 	**XCKS141H29** 	**XCKS149H29** 	**XCKS159H29** 
 **2-pole NC + NO break before make, slow break (XE2NP2151)**	**XCKS501H29** 	**XCKS502H29** 	**XCKS531H29** 	**XCKS539H29** 	**XCKS541H29** 	**XCKS549H29** 	**XCKS559H29** 
 **2-pole NC + NC snap action (XE2SP2141)**	**ZCKS9H29 + ZCKD01** 	**ZCKS9H29 + ZCKD02** 	**ZCKS9H29 + ZCKD31** 	**ZCKS9H29 + ZCKD39** 	**ZCKS9H29 + ZCKD41** 	**ZCKS9H29 + ZCKD49** 	**ZCKS9H29 + ZCKD59** 
 **2-pole NC + NC simultaneous, slow break (XE2NP2141)**	**ZCKS7H29 + ZCKD01** 	**ZCKS7H29 + ZCKD02** 	**ZCKS7H29 + ZCKD31** 	**ZCKS7H29 + ZCKD39** 	**ZCKS7H29 + ZCKD41** 	**ZCKS7H29 + ZCKD49** 	**ZCKS7H29 + ZCKD59** 
 **3-pole NC + NC + NO snap action (XE3SP2141)**	**ZCKSD39H29 + ZCKD01** 	**ZCKSD39H29 + ZCKD02** 	**ZCKSD39H29 + ZCKD31** 	**ZCKSD39H29 + ZCKD39** 	**ZCKSD39H29 + ZCKD41** 	**ZCKSD39H29 + ZCKD49** 	**ZCKSD39H29 + ZCKD59** 
 **3-pole NC + NC + NO break before make, slow break (XE3NP2141)**	**ZCKSD37H29 + ZCKD01** 	**ZCKSD37H29 + ZCKD02** 	**ZCKSD37H29 + ZCKD31** 	**ZCKSD37H29 + ZCKD39** 	**ZCKSD37H29 + ZCKD41** 	**ZCKSD37H29 + ZCKD49** 	**ZCKSD37H29 + ZCKD59** 
Weight (kg)	0.095	0.105	0.145	0.150	0.155	0.155	0.150

Contact operation
 *closed*
open

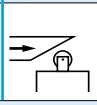
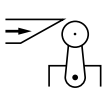
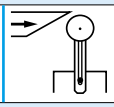
(A) = cam displacement
(P) = positive opening point

⊖ *NC contact with positive opening operation*

References of complete switches with 1 Pg 13 cable entry

For an entry tapped for a Pg 13.5 cable gland, delete **H29** from the end of the reference. Example: XCKS101H29 becomes **XCKS101**.

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 *(6)* (in millions of operating cycles)	25	15	20		
Minimum force or torque For tripping	15 N	12 N	0.15 N.m		
For positive opening	45 N	36 N	0.3 N.m	–	–
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm				

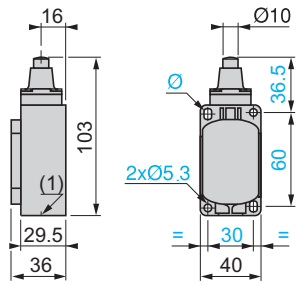
(1) Form conforming to EN 50041, see page 135.
(2) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.
(4) Adjustable throughout 360° in 5° steps, or in 45° steps 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

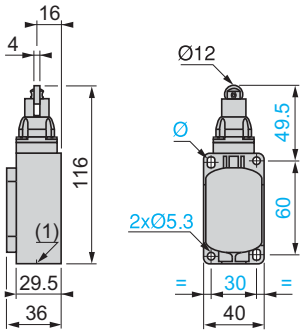
OsiSense XC Standard, format EN 50041

Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Complete switches with 1 cable entry

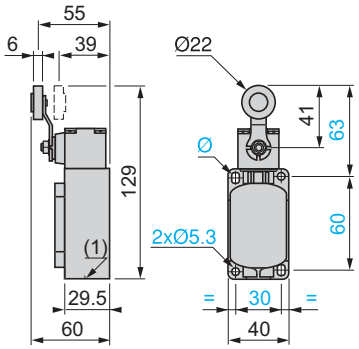
XCKS●01H29
ZCKS● + ZCKD01



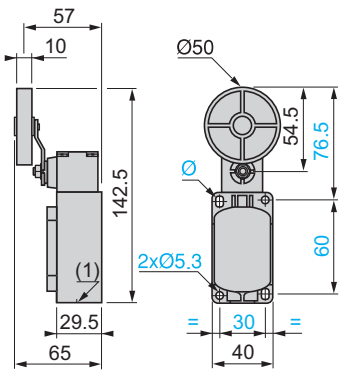
XCKS●02H29
ZCKS● + ZCKD02



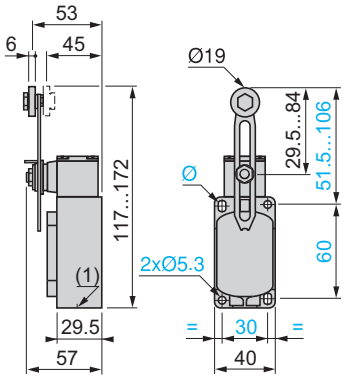
XCKS●31H29
ZCKS● + ZCKD31



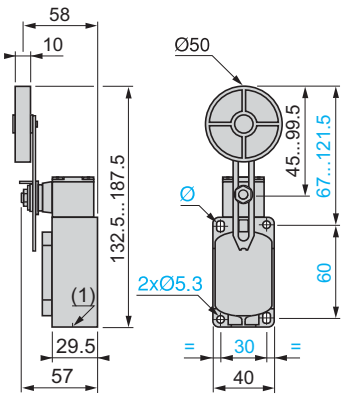
XCKS●39H29
ZCKS● + ZCKD39



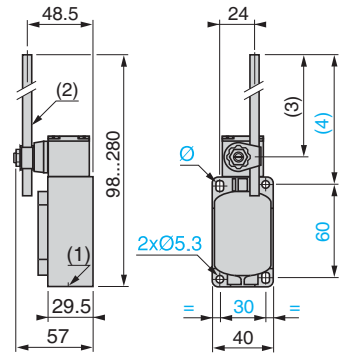
XCKS●41H29
ZCKS● + ZCKD41



XCKS●49H29
ZCKS● + ZCKD49



XCKS●59H29
ZCKS● + ZCKD59

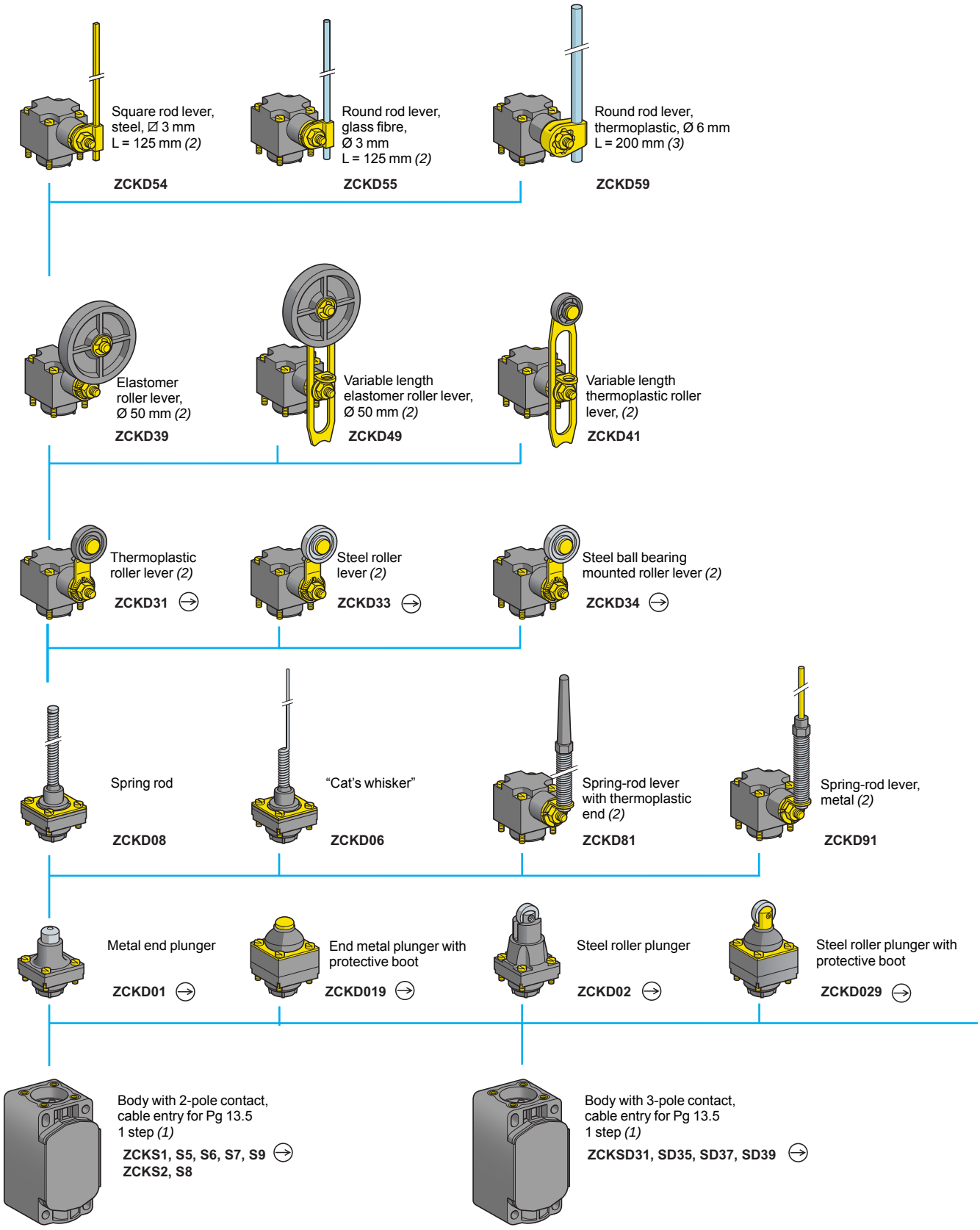


(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland.
(2) Ø 6 rod, length 200 mm.
(3) 190 max.
(4) 212 max.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit switches

OsiSense XC Standard, format EN 50041

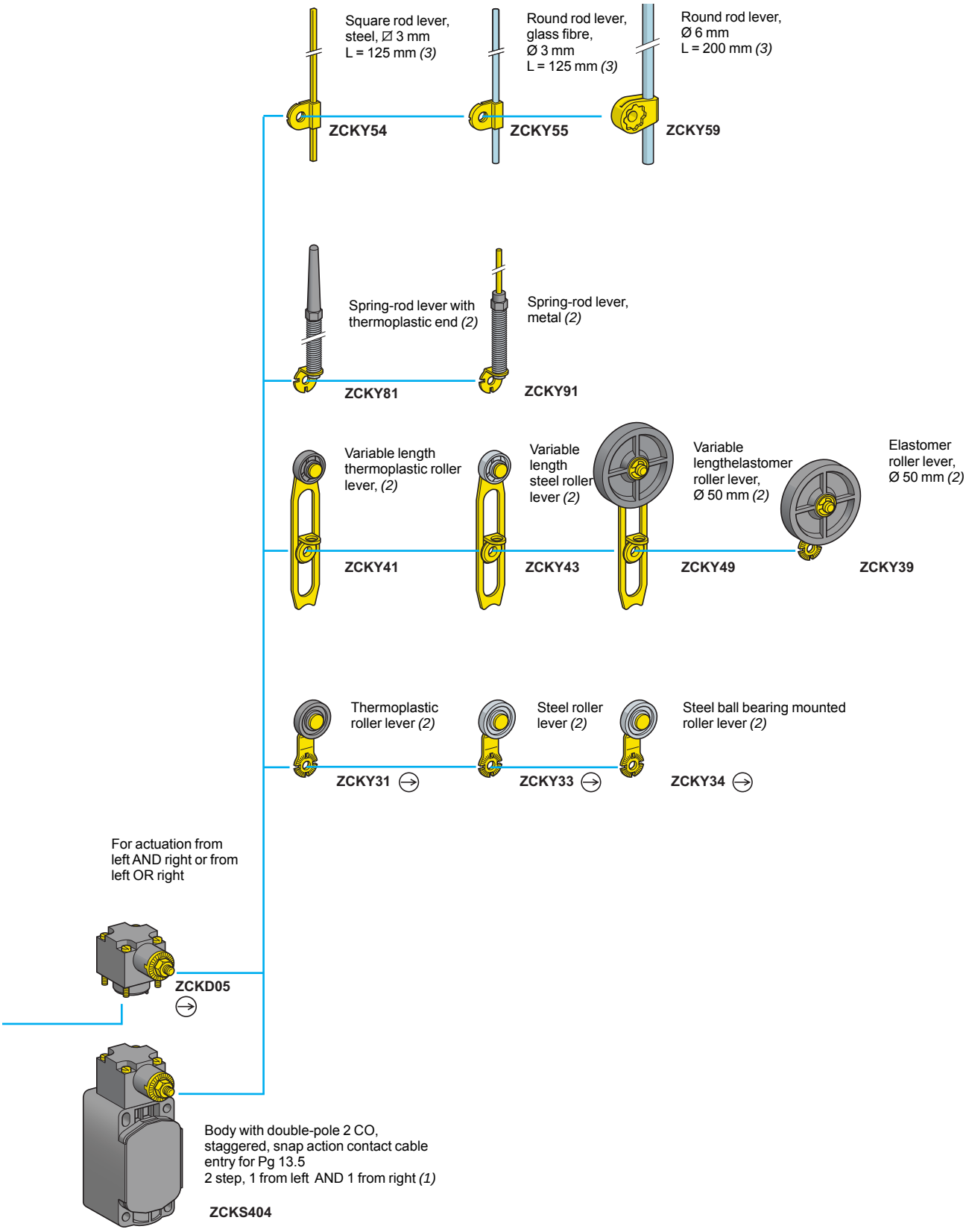
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Variable composition



*(1) For further details see page 96. 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.

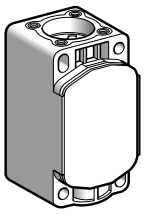
Limit switches

OsiSense XC Standard, format EN 50041
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Variable composition

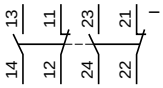


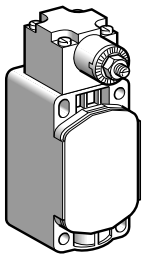
*(1) For further details see page 96. For a cable entry tapped ISO M20 x 1.5, add **H29** to the reference.*
*Example: ZCKS1 becomes **ZCKS1H29**.*
⊖: NC contact with positive opening operation or head assuring positive opening operation.
(2) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
(3) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

Limit switches
OsiSense XC Standard, format EN 50041
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Adaptable sub-assemblies

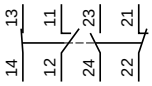

ZCKS●

Bodies with 2-pole contact

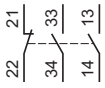
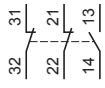
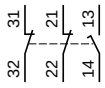
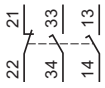
Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	NC + NO snap action (XE2SP2151)		⊖	Pg 13.5	**ZCKS1**	0.080
				ISO M20 x 1.5	**ZCKS1H29**	0.080
	2 CO simultaneous, snap action (XESP3021)		–	Pg 13.5	**ZCKS2**	0.080
				ISO M20 x 1.5	**ZCKS2H29**	0.080
	NC + NO break before make, slow break (XE2NP2151)		⊖	Pg 13.5	**ZCKS5**	0.080
				ISO M20 x 1.5	**ZCKS5H29**	0.080
	NO + NC make before break, slow break (XE2NP2161)		⊖	Pg 13.5	**ZCKS6**	0.080
				ISO M20 x 1.5	**ZCKS6H29**	0.080
	NC + NC simultaneous, slow break (XE2NP2141)		⊖	Pg 13.5	**ZCKS7**	0.080
				ISO M20 x 1.5	**ZCKS7H29**	0.080
	NO + NO simultaneous, slow break (XE2NP2131)		–	Pg 13.5	**ZCKS8**	0.080
				ISO M20 x 1.5	**ZCKS8H29**	0.080
	NC + NC snap action (XE2SP2141)		⊖	Pg 13.5	**ZCKS9**	0.080
				ISO M20 x 1.5	**ZCKS9H29**	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	**ZCKS404**	0.150
				ISO M20 x 1.5	**ZCKS404H29**	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	**ZCKSD31**	0.080
				ISO M20 x 1.5	**ZCKSD31H29**	0.080
	NC + NC + NO snap action (XE3SP2141)		⊖	Pg 13.5	**ZCKSD39**	0.080
				ISO M20 x 1.5	**ZCKSD39H29**	0.080
	NC + NC + NO break before make, slow break (XE3NP2141)		⊖	Pg 13.5	**ZCKSD37**	0.080
				ISO M20 x 1.5	**ZCKSD37H29**	0.080
	NC + NO + NO break before make, slow break (XE3NP2151)		⊖	Pg 13.5	**ZCKSD35**	0.080
				ISO M20 x 1.5	**ZCKSD35H29**	0.080

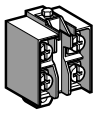
(1) ⊖: NC contact with positive opening operation or head assuring positive opening operation.

Limit switches

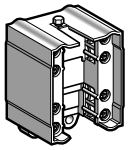
OsiSense XC Standard, format EN 50041

Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Adaptable sub-assemblies

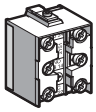
XE2SP21●1



XE2NP21●1

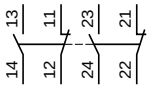
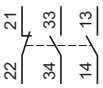
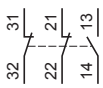
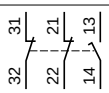
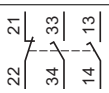


XESP3021



XE3●P21●●

Contact blocks

Type of contact	Scheme	For body	Positive operation (1)	Reference	Weight kg
2-pole contact					
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
3-pole contact					
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

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

Other versions

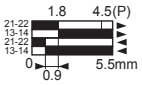
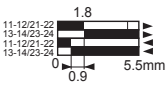
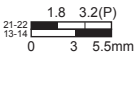
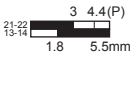
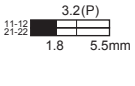
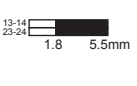
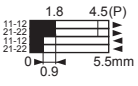
Gold flashed contacts.
Please consult our Customer Care Centre.

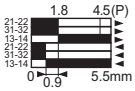
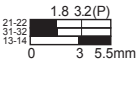
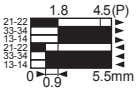
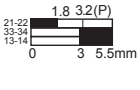
Limit switches

OsiSense XC Standard, format EN 50041

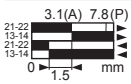
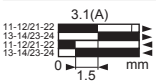
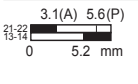
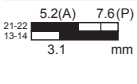
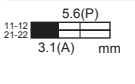
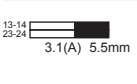
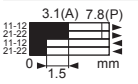
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Adaptable sub-assemblies

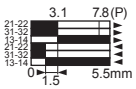
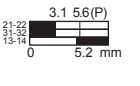
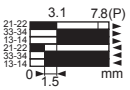
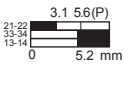
Heads ZCKD01, D109 with body

ZCKS1	ZCKS2	ZCKS5	ZCKS6	ZCKS7	ZCKS8	ZCKS9
						

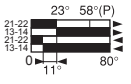
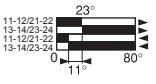
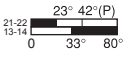
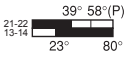
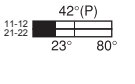
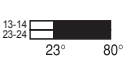
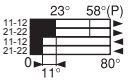
ZCKSD39	ZCKSD37	ZCKSD31	ZCKSD35
			

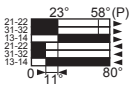
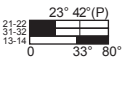
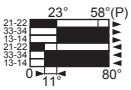
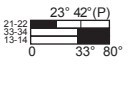
Heads ZCKD02, D029 with body

ZCKS1	ZCKS2	ZCKS5	ZCKS6	ZCKS7	ZCKS8	ZCKS9
						

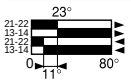
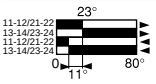
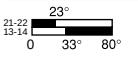
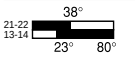
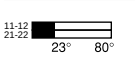
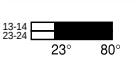
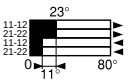
ZCKSD39	ZCKSD37	ZCKSD31	ZCKSD35
			

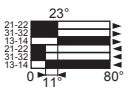
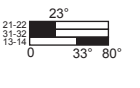
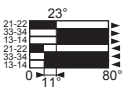
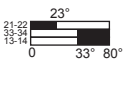
Heads ZCKD31, D33, D34 with body

ZCKS1	ZCKS2	ZCKS5	ZCKS6	ZCKS7	ZCKS8	ZCKS9
						

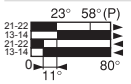
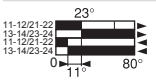
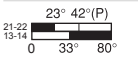
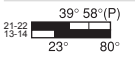
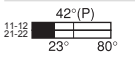
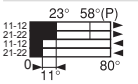
ZCKSD39	ZCKSD37	ZCKSD31	ZCKSD35
			

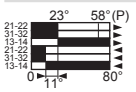
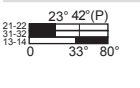
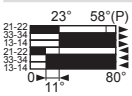
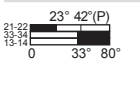
Heads ZCKD39, D41, D49, D54, D55, D59, D81, D91 with body

ZCKS1	ZCKS2	ZCKS5	ZCKS6	ZCKS7	ZCKS8	ZCKS9
						

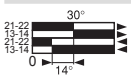
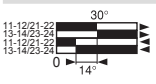
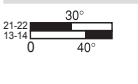
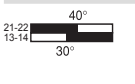
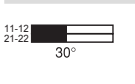
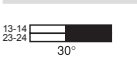
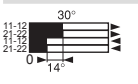
ZCKSD39	ZCKSD37	ZCKSD31	ZCKSD35
			

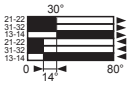
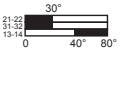
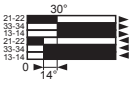
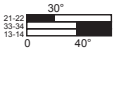
Heads ZCKD05 (positive operation only assured with a ⊖ operating lever) with body

ZCKS1	ZCKS2	ZCKS5	ZCKS6	ZCKS7	ZCKS8	ZCKS9
						

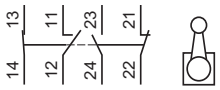
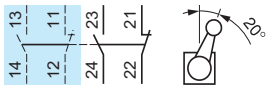
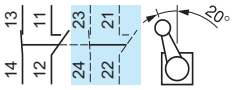
ZCKSD39	ZCKSD37	ZCKSD31	ZCKSD35
			

Heads ZCKD06, D08 with body

ZCKS1	ZCKS2	ZCKS5	ZCKS6	ZCKS7	ZCKS8	ZCKS9
						

ZCKSD39	ZCKSD37	ZCKSD31	ZCKSD35
			

ZCKS404 (body with head)

Unactuated	Actuated from left	Actuated from right
		

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

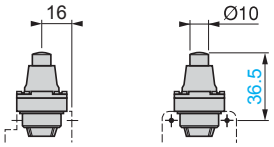
Limit switches

OsiSense XC Standard, format EN 50041

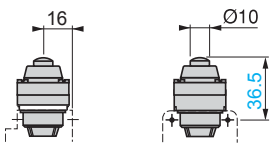
Plastic, double insulated, type XCKS
Conforming to CENELEC EN 50041
Adaptable sub-assemblies

Plunger heads

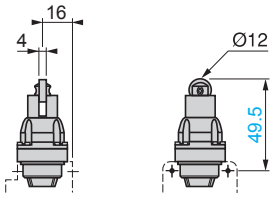
ZCKD01



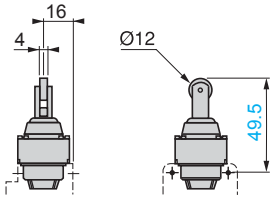
ZCKD019



ZCKD02

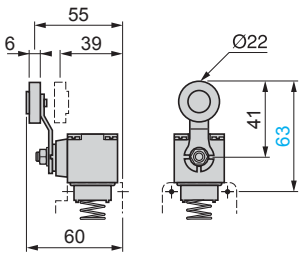


ZCKD029

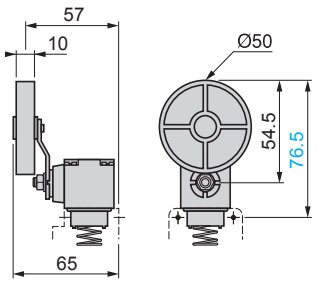


Rotary heads

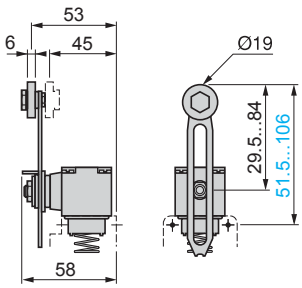
ZCKD31, D33, D34



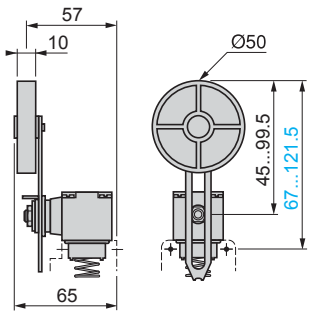
ZCKD39



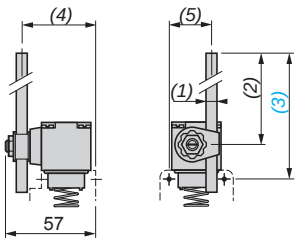
ZCKD41



ZCKD49

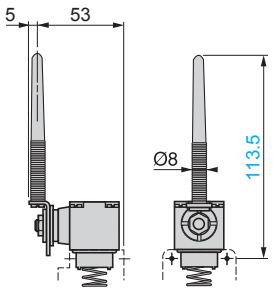


ZCKD54, D55, D59

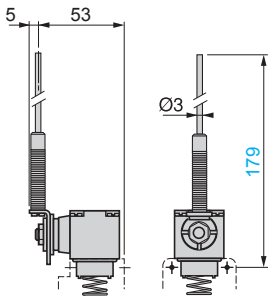


ZCK	(1) rod	(2)	(3)	(4)	(5)
D54	Ø 3, L = 125	115 max.	137 max.	49	24
D55	Ø 3, L = 125	115 max.	137 max.	49	24
D59	Ø 6, L = 200	190 max.	212 max.	46.5	26.2

ZCKD81



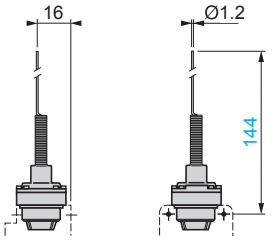
ZCKD91



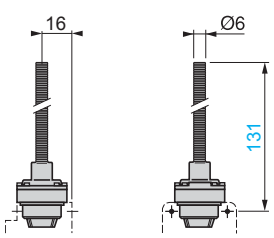
Note: *operating lever spindle threaded M6.*

Multi-directional heads

ZCKD06

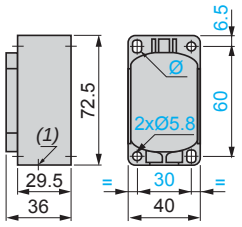


ZCKD08

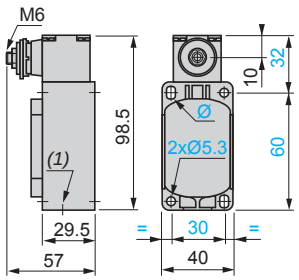


Bodies with contacts

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



ZCKS404, S404H29

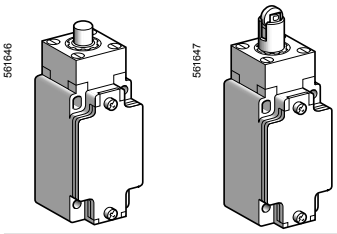


(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit switches
OsiSense XC Standard
Industrial format EN 50041
Metal, type XCK J
Conforming to CENELEC EN 50041

■ XCKJ
fixed body with 1 cable entry

□ With head for linear movement (plunger)



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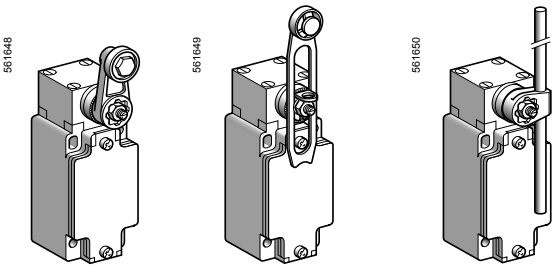
□ With head for rotary movement (lever)



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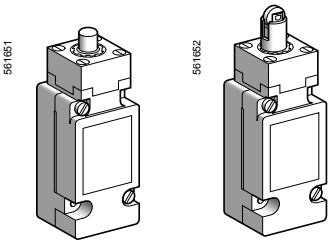
■ XCKJ
plug-in body with 1 cable entry

□ With head for linear movement (plunger)



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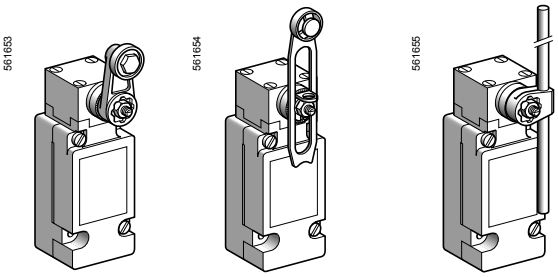
□ With head for rotary movement (lever)



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Environment characteristics

Conformity to standards	Products	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, BV, GOST
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 EN 50102
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

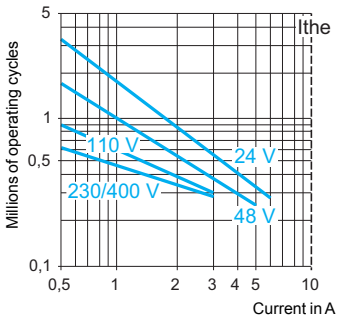
Limit switches
OsiSense XC Standard
Industrial format EN 50041
Metal, type XCK J
Conforming to CENELEC EN 50041

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 mm², max: 2 x 1.5 mm²
	XE2NP21●1	Clamping capacity, min:1 x 0.5 mm², max: 2 x 2.5 mm²
	XCKJ plug-in and XESP20●1	Clamping capacity, min:1 x 0.75 mm², max: 2 x 1.5 mm²
	XE3NP and XE3SP	Clamping capacity, min: 1 x 0.34 mm², max: 1 x 1 mm² or 2 x 0.75 mm²
Minimum actuation speed		**XE2SP21●1** and **XE3SP**: 0.01 m/minute **XE2NP21●1** and **XE3NP**: 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

XE2SP21●1, XE2SP2141

AC supply 50/60 Hz ∼ ⎓ inductive circuit

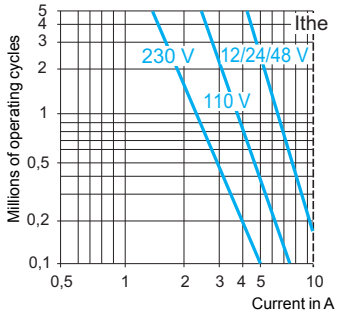


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	10	7	4

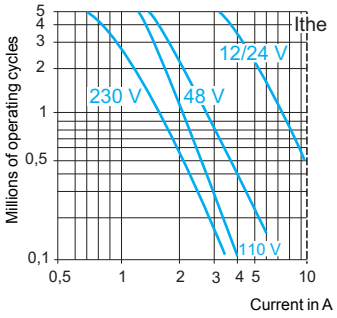
XE2NP21●1



Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	13	9	7

XCK J plug-in, XES P20●1



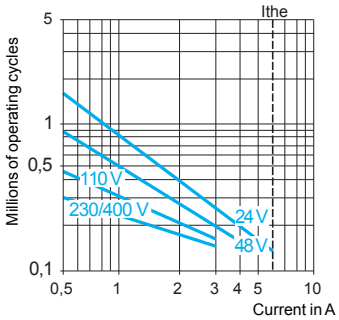
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	10	7	4

For XE2S P●151 on ∼ or ⎓, NC and NO contacts simultaneously loaded to the values shown with reverse polarity.

XE3SP●●●●

AC supply 50/60 Hz ∼ ⎓ inductive circuit

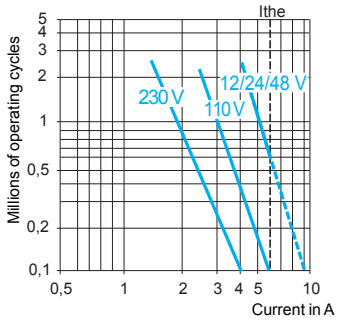


DC supply ⎓

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	3	2	1

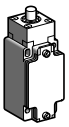
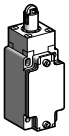
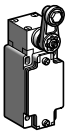
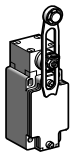
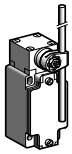
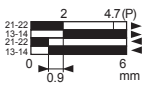
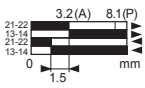
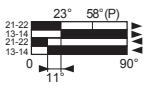
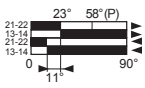
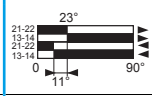
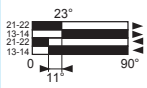
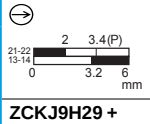
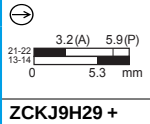
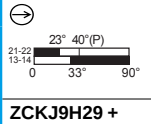
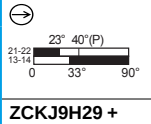
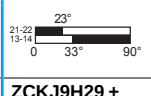
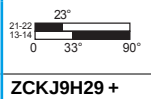
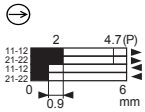
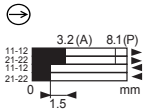
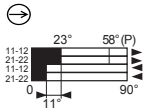
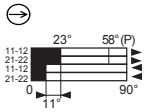
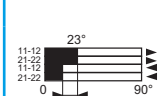
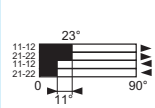
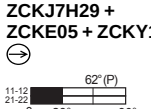
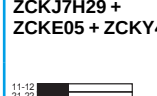
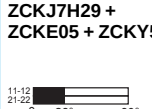
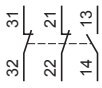
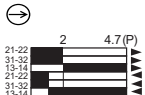
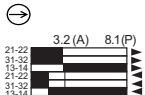
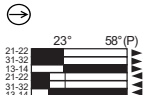
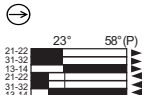
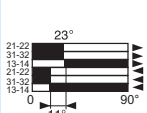
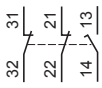
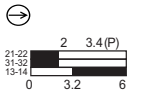
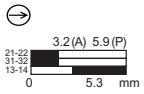
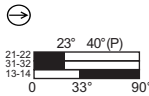
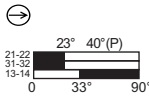
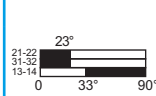
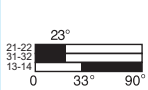
XE3NP●●●●



Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
⎓	W	4	3	2

Limit switches
OsiSense XC Standard
Industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type 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)*
References of complete switches with 1 ISO M20 x 1.5 cable entry *(3)*						
 **2-pole NC + NO snap action (XE2SP2151)**	**XCKJ161H29** 	**XCKJ167H29** 	**XCKJ10511H29** 	**XCKJ10513H29** 	**XCKJ10541H29** 	**XCKJ10559H29** 
 **2-pole NC + NO break before make, slow break (XE2NP2151)**	**XCKJ561H29** 	**XCKJ567H29** 	**XCKJ50511H29** 	**XCKJ50513H29** 	**XCKJ50541H29** 	**XCKJ50559H29** 
 **2-pole NC + NC snap action (XE2SP2141)**	**ZCKJ9H29 + ZCKE61** 	**ZCKJ9H29 + ZCKE67** 	**ZCKJ9H29 + ZCKE05 + ZCKY11** 	**ZCKJ9H29 + ZCKE05 + ZCKY13** 	**ZCKJ9H29 + ZCKE05 + ZCKY41** 	**ZCKJ9H29 + ZCKE05 + ZCKY59** 
 **2-pole NC + NC simultaneous, slow break (XE2NP2141)**	**ZCKJ7H29 + ZCKE61** 	**ZCKJ7H29 + ZCKE67** 	**ZCKJ7H29 + ZCKE05 + ZCKY11** 	**ZCKJ7H29 + ZCKE05 + ZCKY13** 	**ZCKJ7H29 + ZCKE05 + ZCKY41** 	**ZCKJ7H29 + ZCKE05 + ZCKY59** 
 **3-pole NC + NC + NO snap action (XE3SP2141)**	**ZCKJD39H29 + ZCKE61** 	**ZCKJD39H29 + ZCKE67** 	**ZCKJD39H29 + ZCKE05 + ZCKY11** 	**ZCKJD39H29 + ZCKE05 + ZCKY13** 	**ZCKJD39H29 + ZCKE05 + ZCKY41** 	**ZCKJD39H29 + ZCKE05 + ZCKY59** 
 **3-pole NC + NC + NO break before make, slow break (XE3NP2141)**	**ZCKJD37H29 + ZCKE61** 	**ZCKJD37H29 + ZCKE67** 	**ZCKJD37H29 + ZCKE05 + ZCKY11** 	**ZCKJD37H29 + ZCKE05 + ZCKY13** 	**ZCKJD37H29 + ZCKE05 + ZCKY41** 	**ZCKJD37H29 + ZCKE05 + ZCKY59** 
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**.

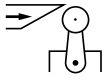
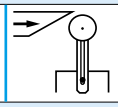
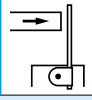
References of complete switches with 1 entry for 1/2" NPT conduit *(2)*

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 135.
(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
OsiSense XC Standard
Industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Complete fixed body switches with 1 cable entry

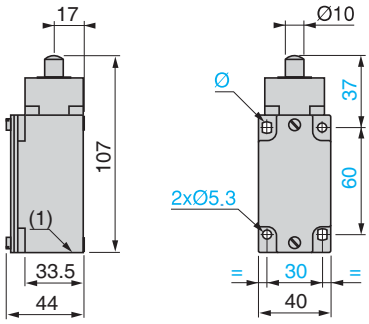
Characteristics

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			

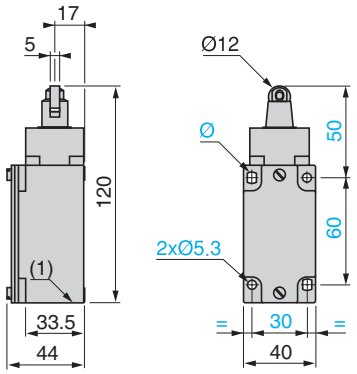
(1) Limited to 15 million operating cycles for switches with contacts XE3●P.

Dimensions

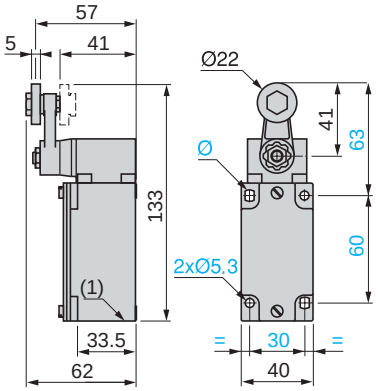
XCKJ●61H29
ZCKJ● + ZCKE61



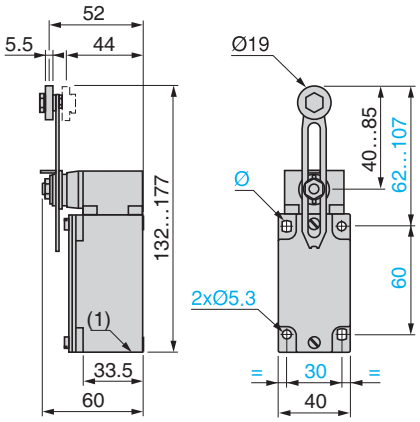
XCKJ●67H29
ZCKJ● + ZCKE67



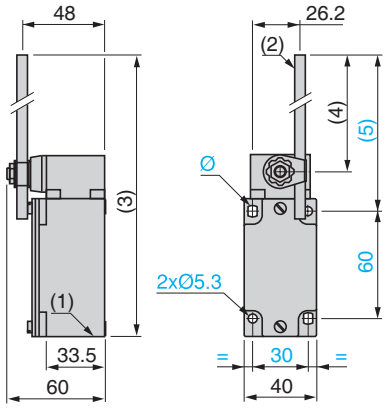
XCKJ●051●H29
ZCKJ● + ZCKE05 + ZCKY11 or Y13



XCKJ●0541H29
ZCKJ● + ZCKE05 + ZCKY41



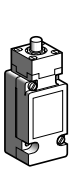
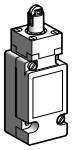
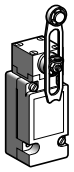
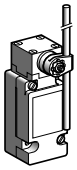
XCKJ●0559H29
ZCKJ● + ZCKE05 + ZCKY59



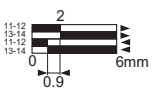
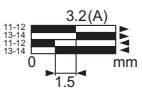
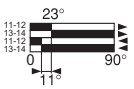
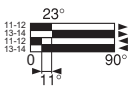
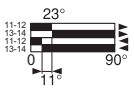
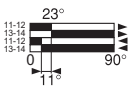
(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.
(2) Ø 6 rod, length 200 mm.
(3) 282 max.
(4) 190 max.
(5) 212 max.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type 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)*

References of complete switches with 1 ISO M20 x 1.5 cable entry *(3)*

 **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*		

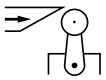
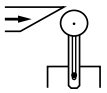
References of complete switches with 1 Pg 13.5 cable entry *(3)*

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

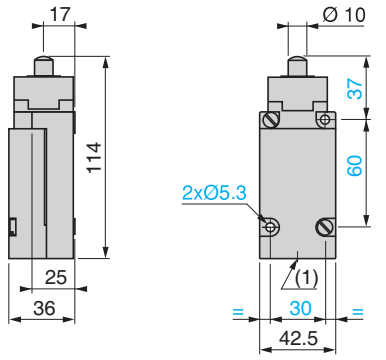
Switch actuation	On end	By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s	1 m/s	1.5 m/s		
Mechanical durability (in millions of operating cycles)	**30**	**25**	**30**		
Minimum tripping force or torque	20 N	16 N	0.25 N.m		
Cable entry	1 entry tapped M20 x 1.5 for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

(1) Form conforming to EN 50041, see page 135.
(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.

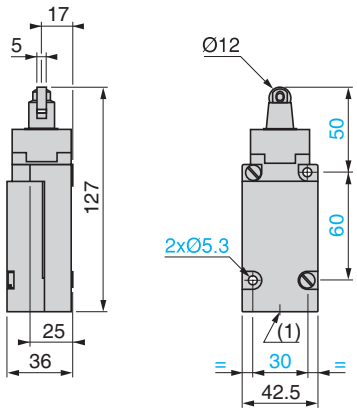
Limit switches

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

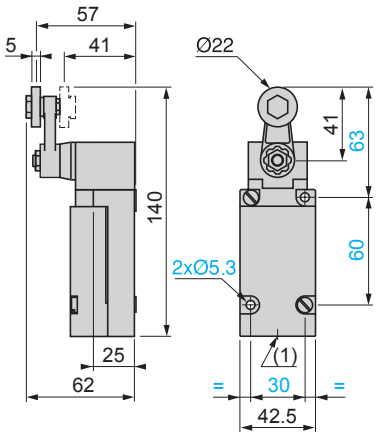
XCKJ1611H29



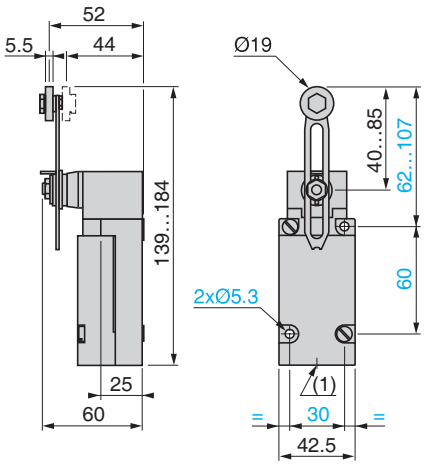
XCKJ1167H29



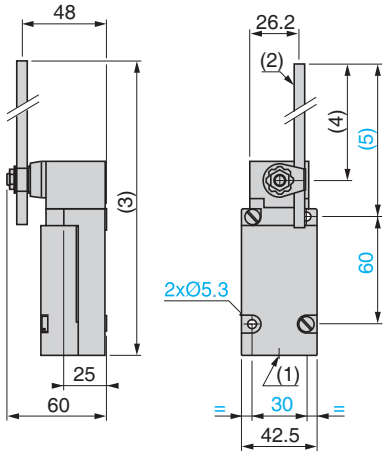
XCKJ110511H29, XCKJ110513H29



XCKJ110541H29



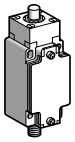
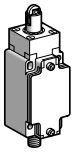
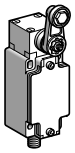
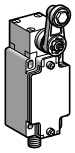
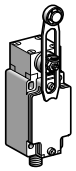
XCKJ110559H29



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or for 1/2" NPT conduit.
(2) Ø 6 rod, length 200 mm.
(3) 289 max.
(4) 190 max.
(5) 212 max.

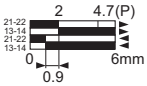
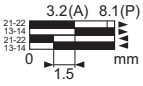
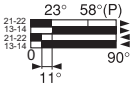
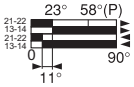
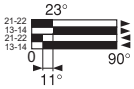
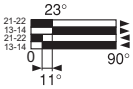
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type 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 (XE2S P2151)

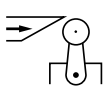
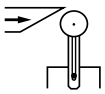
XCKJ161D	**XCKJ167D**	**XCKJ10511D**	**XCKJ10513D**	**XCKJ10541D**	**XCKJ10559D**
					
0.430	0.455	0.480	0.490	0.485	0.485

Contact operation

■ *closed*
□ *open*

(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, Ui = 60 V, Ie = 4 A (see suitable pre-wired female connectors below).				

(1) Form conforming to EN 50041, see page 135.
(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

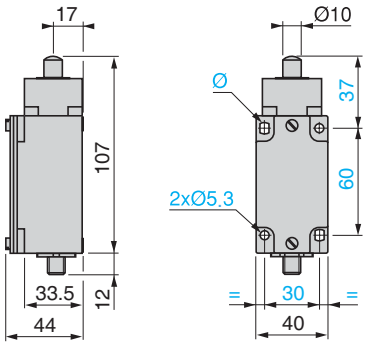
Type of connector		**M12 straight, 5-pin, 4 A/24 V max.**	**M12 elbowed, 5-pin, 4 A/24 V max.**
With cable, Ø 5.8 mm (4 x 0.34 mm² + 1 x 0.5 mm²)	L = 2 m	**XZCP1164L2**	**XZCP1264L2**
	L = 5 m	**XZCP1164L5**	**XZCP1264L5**
	L = 10 m	**XZCP1164L10**	**XZCP1264L10**
Weight (kg)	L = 2 m	0.115	
	L = 5 m	0.270	
	L = 10 m	0.520	

Limit switches

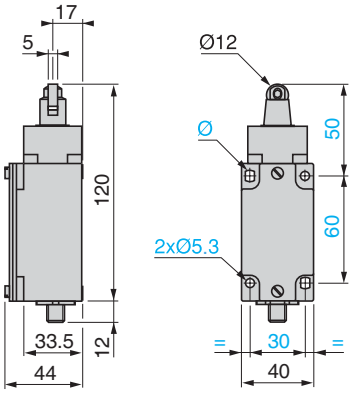
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Complete switches, fixed body
M12 connector

Dimensions

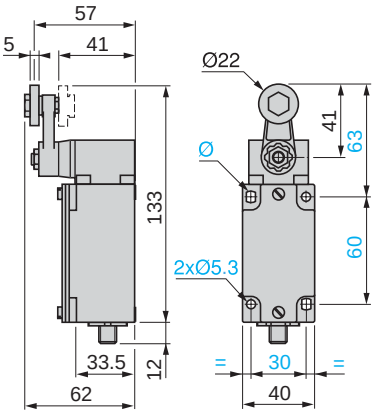
XCKJ161D



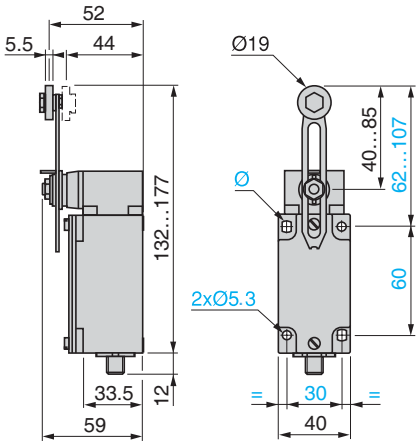
XCKJ167D



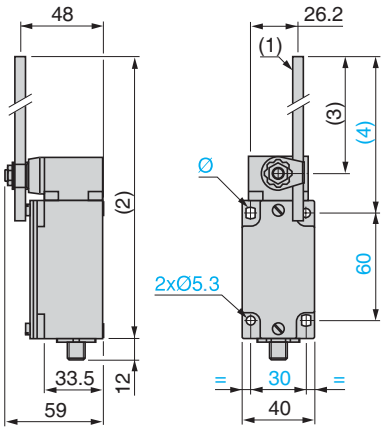
XCKJ1051●D



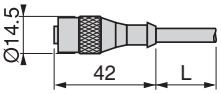
XCKJ10541D



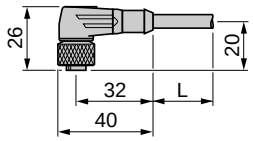
XCKJ10559D



XZCP1164L●



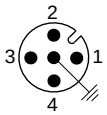
XZCP1264L●



(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.*

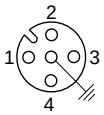
Connections

Limit switch XCKJ●●●●D



1-2 = NC
3-4 = NO
5 = ⏚
4 A / 24 V max.

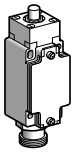
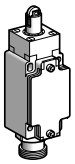
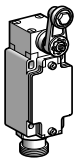
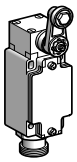
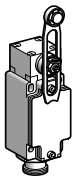
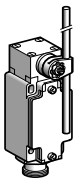
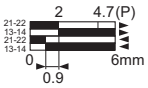
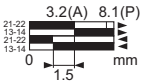
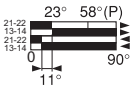
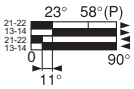
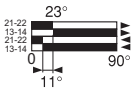
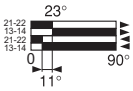
Pre-wired female connector XZCP1●64L●



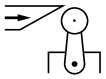
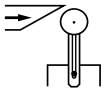
1 = brown
2 = white
3 = blue
4 = black
5 = ⏚ yellow/green

Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type 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 135.
(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

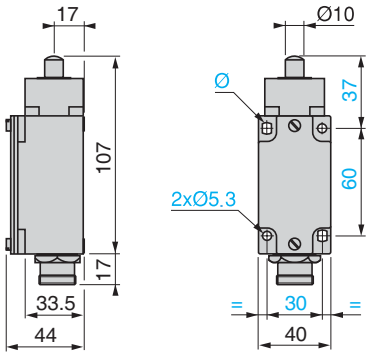
Type of connector		**7/8"-16UN straight, 5-pin, 4 A/250 V max.**
With cable, Ø 5.9 mm (5 x 0.34 mm²)	L = 2 m	**XZCP1764L2**
	L = 5 m	**XZCP1764L5**
	L = 10 m	**XZCP1764L10**
Weight (kg)	L = 2 m	0.185
	L = 5 m	0.460
	L = 10 m	0.900

Limit switches

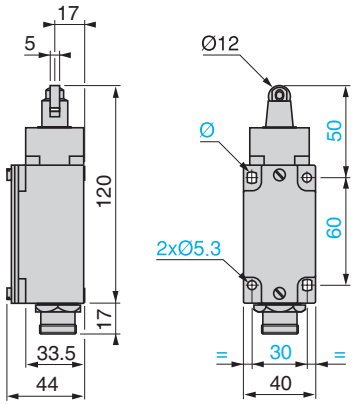
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Complete switches, fixed body
7/8"-16UN connector

Dimensions

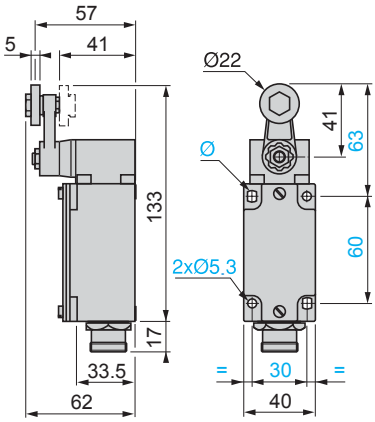
XCKJ161A



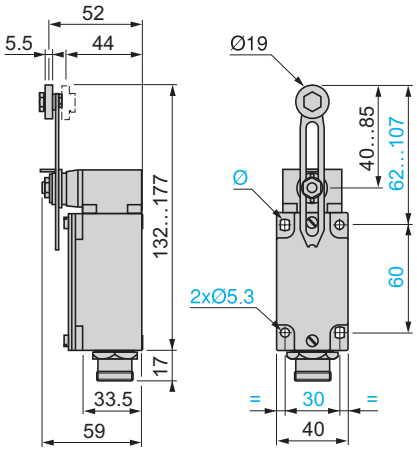
XCKJ167A



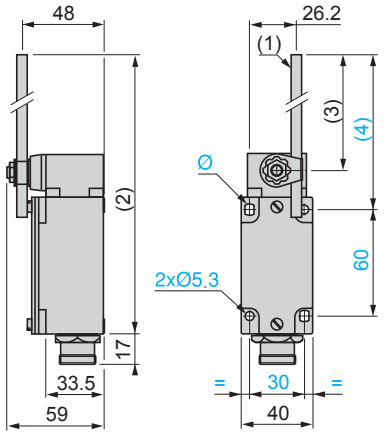
XCKJ1051●A



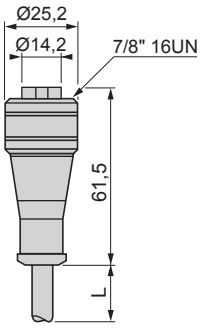
XCKJ10541A



XCKJ10559A



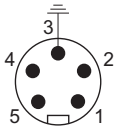
XZCP1764L●



(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.*

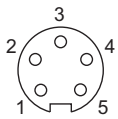
Connections

Limit switch XCKJ●●●●A



1 = 21
2 = 22
3 = ⏚
4 = 14
5 = 13

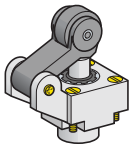
Pre-wired female connector XZCP1764L●



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

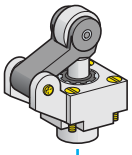
Limit switches

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



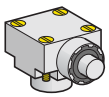
Thermoplastic roller lever plunger, 1 direction of actuation

ZCKE21



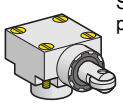
Steel roller lever plunger, 1 direction of actuation

ZCKE23



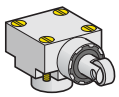
Side metal plunger *(1)*

ZCKE63



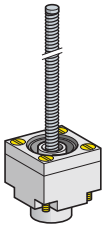
Side steel roller plunger, horizontal *(1)*

ZCKE64



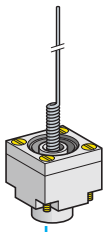
Side steel roller plunger, vertical *(1)*

ZCKE65



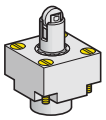
Spring rod *(1)*

ZCKE08



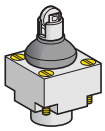
"Cat's whisker" *(1)*

ZCKE06



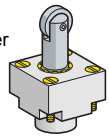
End reinforced steel roller plunger

ZCKE67



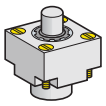
End steel roller plunger with protective boot

ZCKE629



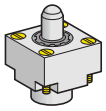
End steel roller plunger

ZCKE62



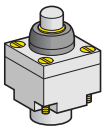
End metal plunger

ZCKE61



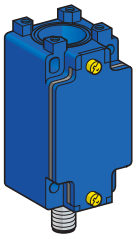
End steel ball bearing plunger

ZCKE66



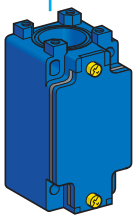
End metal plunger with protective boot

ZCKE619



Body with 2-pole contact, fixed, 1 step, M12 connector *(2)*

ZCKJ1D, J5D, J6D, J7D
ZCKJ8D



Body with contact, cable entry for Pg 13.5, fixed, 1 step *(2) (3)*

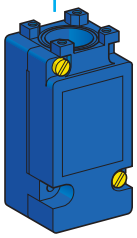
ZCKJD3●, ZCKJ1, J5, J6, J7, J9

Body with contact, cable entry for Pg 13.5, fixed, 1 step *(2) (3)*

ZCKJ2, J8

Body with contact, cable entry for Pg 13.5, fixed, 2 step *(2) (3)*

ZCKJ4



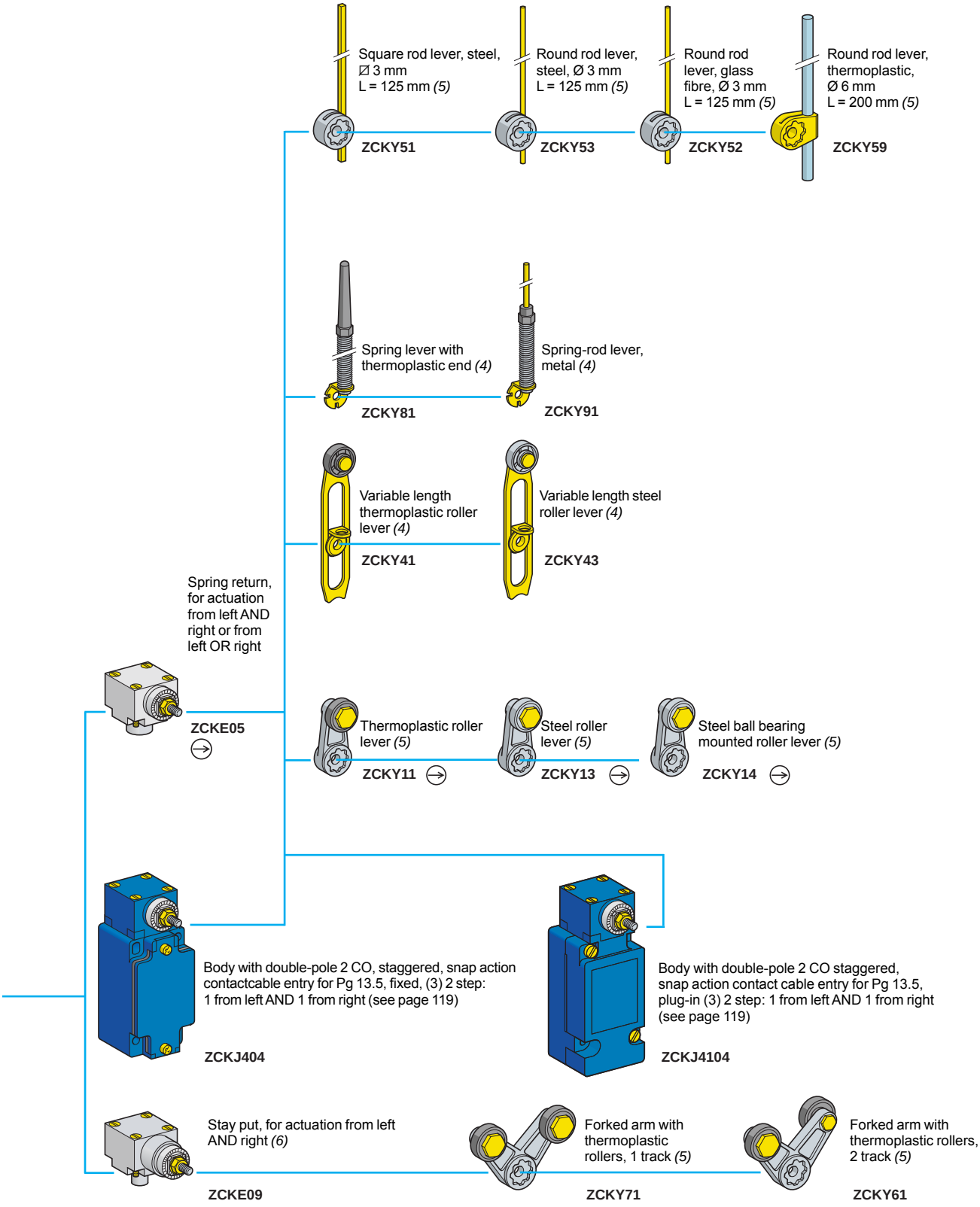
Body with contact, cable entry for Pg 13.5, plug-in, 1 or 2 step *(2) (3)*

ZCKJ11, J21, J41

(1) Cannot be used with bodies ZCKJ4 and ZCKJ41.
(2) For further information, see page 112.
*(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**.*

Limit switches

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

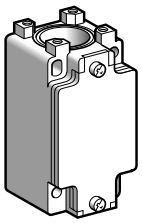


⊖ *: head assuring positive opening operation.*

(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.

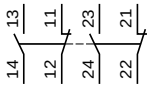
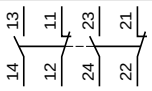
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body
Adaptable sub-assemblies: standard bodies

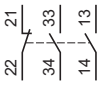
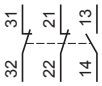
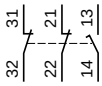
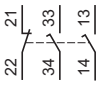


ZCKJ●

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	**ZCKJ1**	0.310
				ISO M20 x 1.5	**ZCKJ1H29**	0.310
				1/2" NPT	**ZCKJ1H7**	0.310
	2 CO simultaneous, snap action (XESP2021)		–	Pg 13.5	**ZCKJ2**	0.310
				ISO M20 x 1.5	**ZCKJ2H29**	0.310
				1/2" NPT	**ZCKJ2H7**	0.310
	1 NC + 1 NO break before make, slow break (XE2NP2151)		⊖	Pg 13.5	**ZCKJ5**	0.310
				ISO M20 x 1.5	**ZCKJ5H29**	0.310
				1/2" NPT	**ZCKJ5H7**	0.310
	1 NO + 1 NC make before break, slow break (XE2NP2161)		⊖	Pg 13.5	**ZCKJ6**	0.310
				ISO M20 x 1.5	**ZCKJ6H29**	0.310
				1/2" NPT	**ZCKJ6H7**	0.310
	2 NC simultaneous, slow break (XE2NP2141)		⊖	Pg 13.5	**ZCKJ7**	0.310
				ISO M20 x 1.5	**ZCKJ7H29**	0.310
				1/2" NPT	**ZCKJ7H7**	0.310
	2 NO simultaneous, slow break (XE2NP2131)		–	Pg 13.5	**ZCKJ8**	0.310
				ISO M20 x 1.5	**ZCKJ8H29**	0.310
				1/2" NPT	**ZCKJ8H7**	0.310
	2 NC snap action (XE2SP2141)		⊖	Pg 13.5	**ZCKJ9**	0.310
				ISO M20 x 1.5	**ZCKJ9H29**	0.310
				1/2" NPT	**ZCKJ9H7**	0.310
2 step	2 CO staggered snap action (XESP2031)		–	Pg 13.5	**ZCKJ4**	0.310
				ISO M20 x 1.5	**ZCKJ4H29**	0.310
				1/2" NPT	**ZCKJ4H7**	0.310

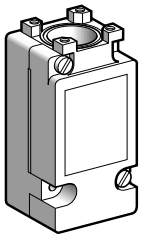
Fixed bodies with 3-pole contact

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

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

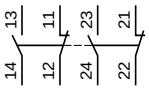
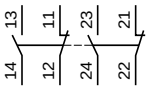
Limit switches

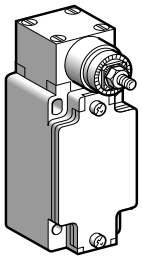
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body
Adaptable sub-assemblies: standard bodies



ZCKJ●1

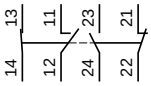
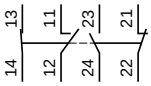
Plug-in bodies with contact

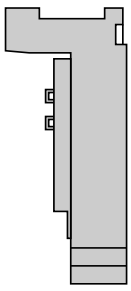
Type	With contact block	Scheme	Positive operation *(1)*	Cable entry	Reference	Weight kg
1 step	Single-pole 1 CO snap action		–	Pg 13.5	**ZCKJ11**	0.300
				ISO M20 x 1.5	**ZCKJ11H29**	0.300
				1/2" NPT	**ZCKJ11H7**	0.300
	Double-pole 2 CO simultaneous, snap action		–	Pg 13.5	**ZCKJ21**	0.300
				ISO M20 x 1.5	**ZCKJ21H29**	0.300
				1/2" NPT	**ZCKJ21H7**	0.300
2 step	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ41**	0.300
				ISO M20 x 1.5	**ZCKJ41H29**	0.300
				1/2" NPT	**ZCKJ41H7**	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
Fixed body						
2 step 1 from left AND 1 from right (see page 119)	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ404**	0.455
				ISO M20 x 1.5	**ZCKJ404H29**	0.455
				1/2" NPT	**ZCKJ404H7**	0.455
Plug-in body						
2 step 1 from left AND 1 from right (see page 119)	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ4104**	0.465
				ISO M20 x 1.5	**ZCKJ4104H29**	0.465
				1/2" NPT	**ZCKJ4104H7**	0.465



ZCKJ0●

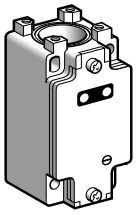
Plug-in housing only

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

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

Limit switches

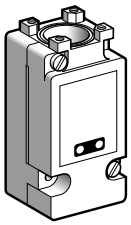
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body. Adaptable sub-assemblies: bodies with indicator light module



ZCKJ●●●

Fixed bodies with 2-pole contact

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



ZCKJ1●●●

Plug-in bodies with single-pole contact

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

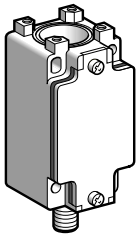
(1) ⊖: NC contact with positive opening operation.

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

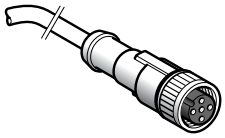
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body. Adaptable sub-assemblies: bodies with M12 connector



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



XZCP1164L●

Female pre-wired connectors

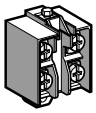
Description	Cable length	Reference	Weight kg
Female pre-wired connectors, M12, straight Ø 5,0 mm cable Conductor c.s.a: 5 x 0.34 mm² Nominal current : 4 A Nominal voltage: ∼ 30 V, ⎓ 36 V	1 m	**XZCP1164L2**	0.115
	5 m	**XZCP1164L5**	0.270
	10 m	**XZCP1164L10**	0.520

(1) NC contact with positive opening operation.

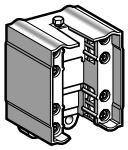
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body
Adaptable sub-assemblies: contact blocks

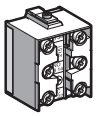
XE2SP21●1



XE2NP21●1

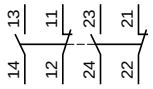
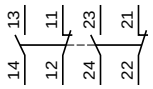
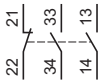
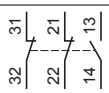
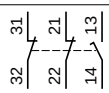
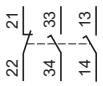


XESP20●1



XE3●P21●1

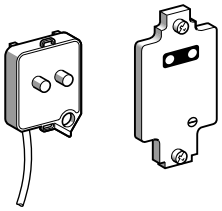
Contact blocks

Type of contact	Scheme	For bodies	Positive operation *(1)*	Reference	Weight kg
2-pole contact					
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	–	**XESP2021**	0.045
2 CO staggered, snap action		ZCKJ4	–	**XESP2031**	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
3-pole contact					
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

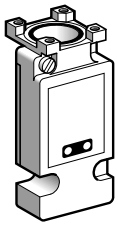
(1) ⊖: NC contact with positive opening operation.

Limit switches

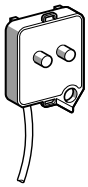
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body
Adaptable sub-assemblies: add-ons



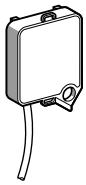
ZCKZ0●●



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 ⎓	**ZCKZ020**	0.060
	2 LEDs	24 V ⎓	**ZCKZ021**	0.060
	2 LEDs	110/240 V ∿	**ZCKZ034**	0.060
Plug-in body	2 LEDs	24 V ⎓	**ZCKJ0121**	0.200
	2 LEDs	110/240 V ∿	**ZCKJ0134**	0.200

Indicator light modules

For use with	Number and type of indicators	Voltage	Reference	Weight kg
Fixed body	1 LED	24 V ⎓	**ZCKJ902**	0.030
	2 LEDs	24 V ⎓	**ZCKJ906**	0.030
	2 LEDs	110/240 V ∿	**ZCKJ904**	0.030

Module with resistor for machine diagnostics

For use with	Resistor value	Reference	Weight kg
Fixed body (ZCKJ1 only)	15 kΩ, 1/4 W	**ZCKJ82A**	0.030

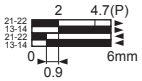
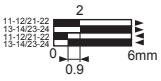
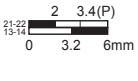
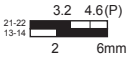
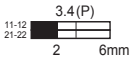
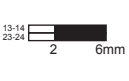
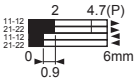
Other versions — Covers + indicator light module for other supply voltages. Please consult our Customer Care Centre.

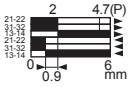
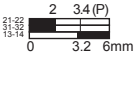
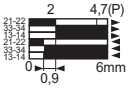
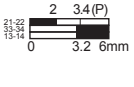
Limit switches

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

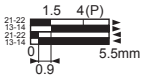
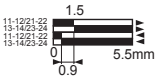
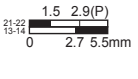
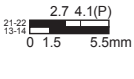
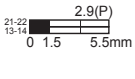
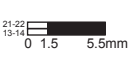
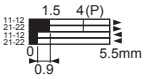
Function diagrams (positive operation assured only if the associated sub-assemblies are ⊖)

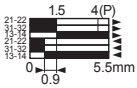
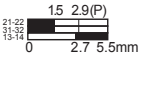
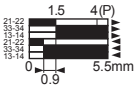
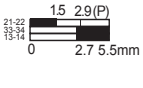
Heads ZCKE61, E619, E66 with body

ZCKJ1●	ZCKJ2●	ZCKJ5●	ZCKJ6●	ZCKJ7●	ZCKJ8●	ZCKJ9
						

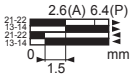
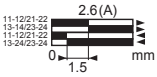
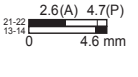
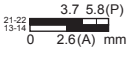
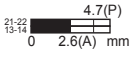
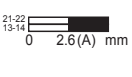
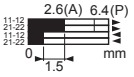
ZCKJD39	ZCKJD37	ZCKJD31	ZCKJD35
			

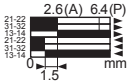
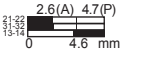
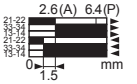
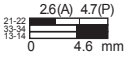
Head ZCKE63 with body

ZCKJ1●	ZCKJ2●	ZCKJ5●	ZCKJ6	ZCKJ7	ZCKJ8	ZCKJ9
						

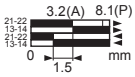
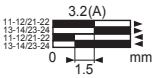
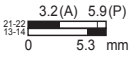
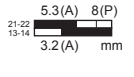
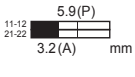
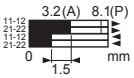
ZCKJD39	ZCKJD37	ZCKJD31	ZCKJD35
			

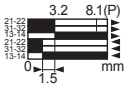
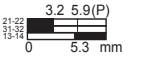
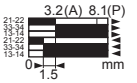
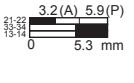
Heads ZCKE64, E65 with body

ZCKJ1●	ZCKJ2●	ZCKJ5●	ZCKJ6	ZCKJ7	ZCKJ8	ZCKJ9
						

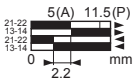
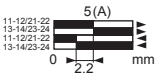
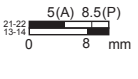
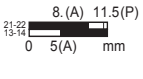
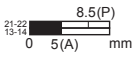
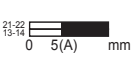
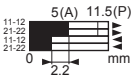
ZCKJD39	ZCKJD37	ZCKJD31	ZCKJD35
			

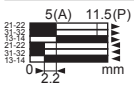
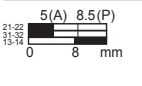
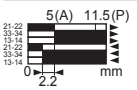
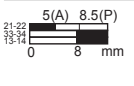
Heads ZCKE67, E629 with body

ZCKJ1●	ZCKJ2●	ZCKJ5●	ZCKJ6	ZCKJ7	ZCKJ8	ZCKJ9
						

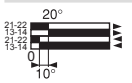
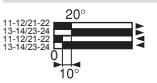
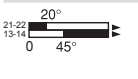
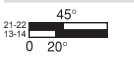
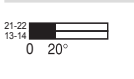
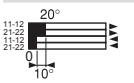
ZCKJD39	ZCKJD37	ZCKJD31	ZCKJD35
			

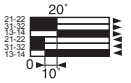
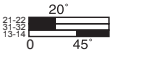
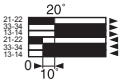
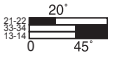
Heads ZCKE21, E23 with body

ZCKJ1●	ZCKJ2●	ZCKJ5●	ZCKJ6	ZCKJ7	ZCKJ8	ZCKJ9
						

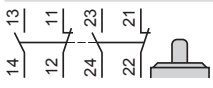
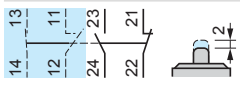
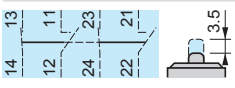
ZCKJD39	ZCKJD37	ZCKJD31	ZCKJD35
			

Heads ZCKE06, E08 with body

ZCKJ1●	ZCKJ2●	ZCKJ5●	ZCKJ6	ZCKJ7	ZCKJ8	ZCKJ9
						

ZCKJD39	ZCKJD37	ZCKJD31	ZCKJD35
			

ZCKJ4●

Unactuated	1st step	2nd step
		

Contact operation

■ closed
□ open

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

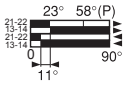
Limit switches

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

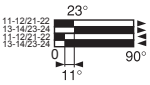
Function diagrams (positive operation assured only if the associated sub-assemblies are ⊖)

Head ZCKE05 with body

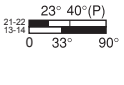
ZCKJ1●



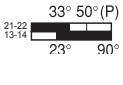
ZCKJ2●



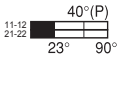
ZCKJ5●



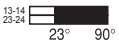
ZCKJ6



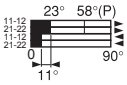
ZCKJ7



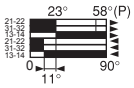
ZCKJ8



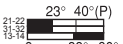
ZCKJ9



ZCKJD39

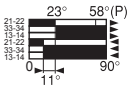


ZCKJD37



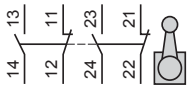
ZCKJD39

ZCKJD31

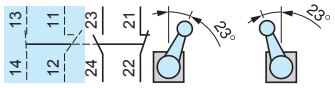


ZCKJ4●

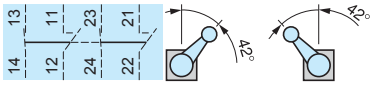
Unactuated



1st step, actuated from left or right

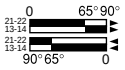


2nd step, actuated from left or right

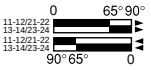


Head ZCKE09 with body

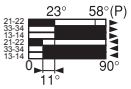
ZCKJ1●



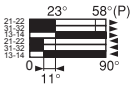
ZCKJ2●



ZCKJD31

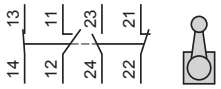


ZCKJD39

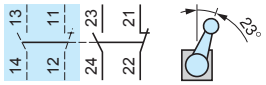


ZCKJ404, J4104 (body with head)

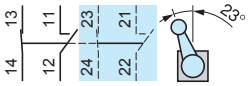
Unactuated



Actuated from left



Actuated from right

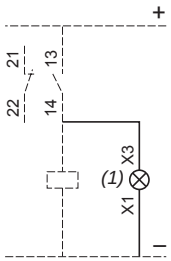


Contact operation — ■ closed, □ open — (P) = positive opening point

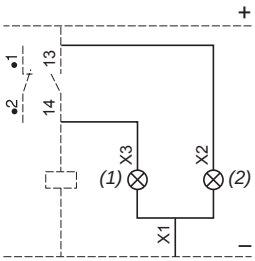
Wiring schemes

Indicator light modules

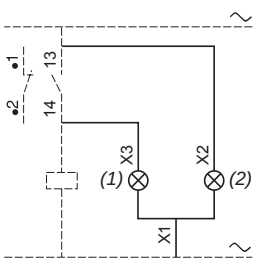
1 LED, 24 V ⎓



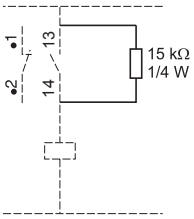
2 LEDs, 24 V ⎓



2 LEDs, 110/240 V ∿

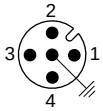


Module with resistor



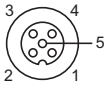
(1) Orange indicator
(2) Green indicator

ZCKJ●D



1 - 2 = NC
3 - 4 = NO
5 = ⏚
4 A / 24 V max.

Pre-wired connectors XZCP1164●



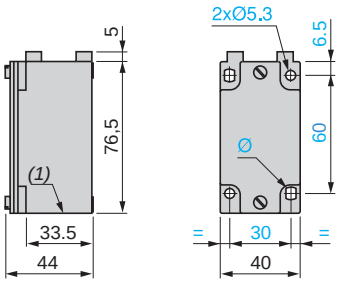
1 = brown
2 = white/black
3 = blue
4 = black
5 = yellow/green

Limit switches

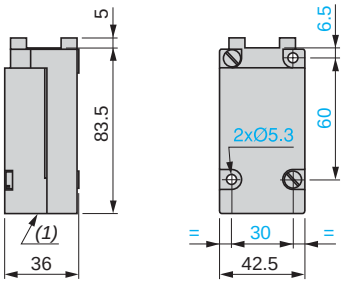
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body
Adaptable sub-assemblies

Bodies

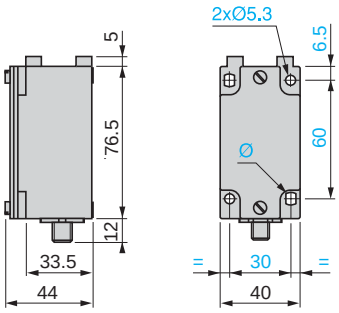
ZCKJ1, J2, J5, J4, J●2●, J●3●, J6, J7, J8, J9
ZCKJ1H29, J2H29, J5H29, J4H29, J●2●H29, J●3●H29, J6H29, J7H29, J8H29, J9H29
ZCKJ1H7, J2H7, J5H7, J4H7, J●2●H7, J●3●H7, J6H7, J7H7, J8H7, J9H7



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

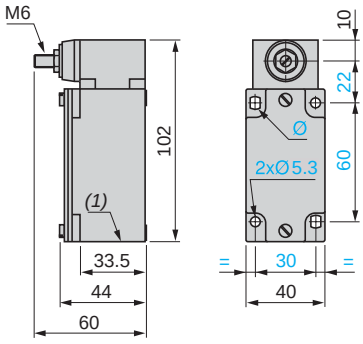


ZCKJ1D, J5D, J6D, J7D, J8D

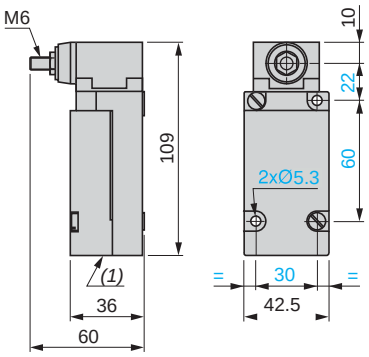


Bodies with rotary head mounted

ZCKJ404, ZCKJ404H29, ZCKJ404H7

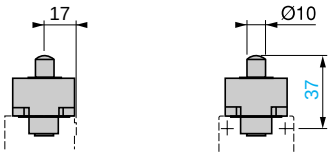


ZCKJ4104, ZCKJ4104H29, ZCKJ4104H7

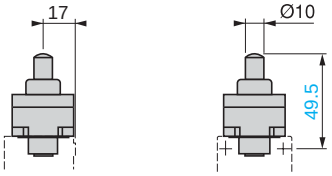


Plunger heads

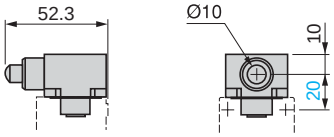
ZCKE61



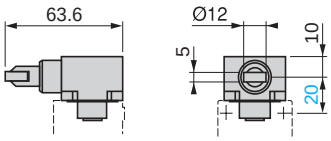
ZCKE619



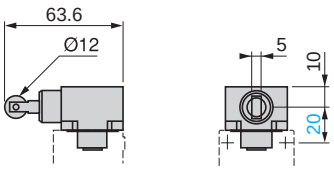
ZCKE63



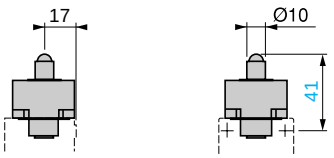
ZCKE64



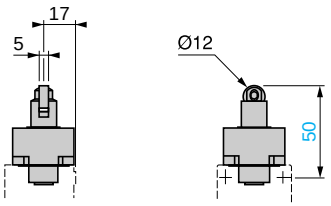
ZCKE65



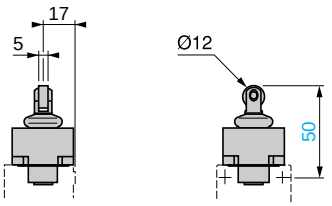
ZCKE66



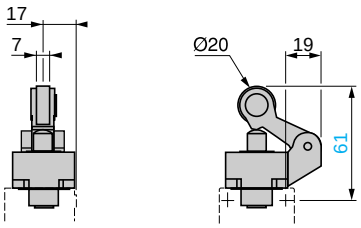
ZCKE62, ZCKE67



ZCKE629



ZCKE21, E23



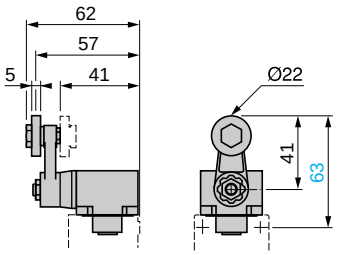
(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or tapped 1/2" NPT.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit switches

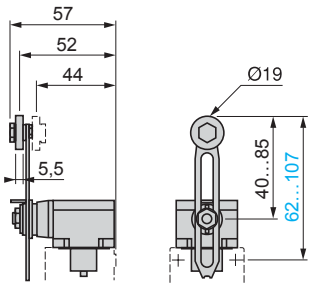
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body
Adaptable sub-assemblies

Rotary head ZCKE05 with operating lever

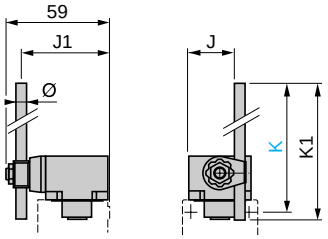
ZCKY11, Y13, Y14



ZCKY41, Y43

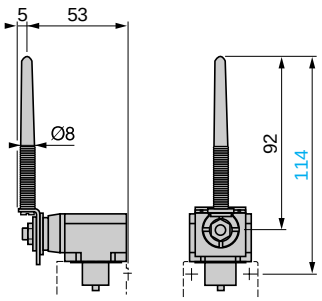


ZCKY51, Y52, Y53, Y59

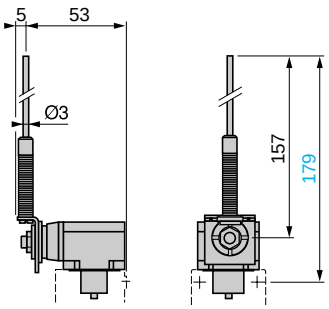


	J	J1	K max.	K1	Ø
ZCKY51	20	49	137	123	Ø 3
ZCKY52	20	49	137	125	Ø 3
ZCKY53	20	49	137	125	Ø 3
ZCKY59	26.2	48	212	200	Ø 6

ZCKY81

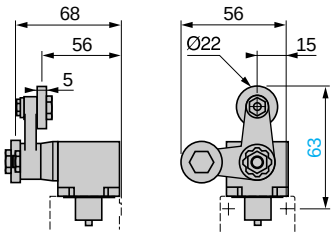


ZCKY91

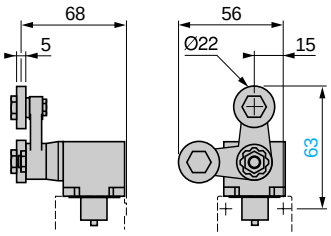


Rotary head ZCKE09 with operating lever

ZCKY61

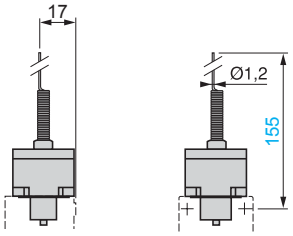


ZCKY71

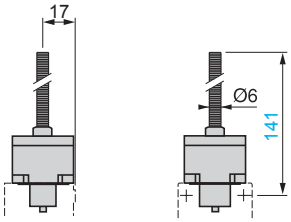


Multi-directional heads

ZCKE06

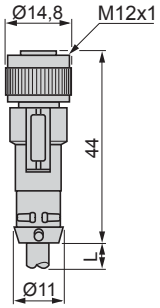


ZCKE08



Note: *operating lever spindle threaded M6.*

Pre-wired connectors XZCP1164L●

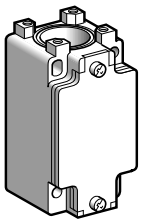


L = 2, 5 or 10 m.

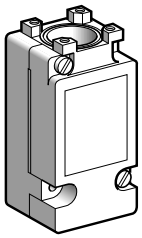
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body

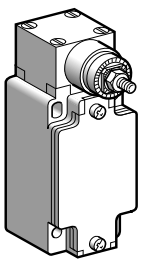
Adaptable sub-assemblies for low temperature applications (- 40°C)



ZCKJ1

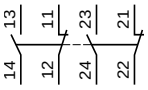
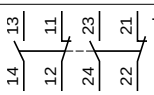
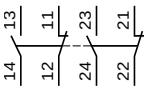
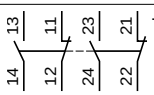


ZCKJ11

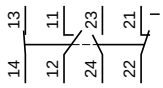
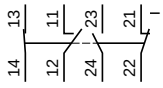


ZCKJ4046

Bodies with contacts For plunger or rotary head

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
Fixed bodies						
1 step	2-pole NC + NO snap action (XE2SP2151)		⊖	Pg 13.5	**ZCKJ1**	0.310
				ISO M20 x 1.5	**ZCKJ1H29**	0.310
				1/2" NPT	**ZCKJ1H7**	0.310
	Double-pole 2 CO simultaneous, snap action (XESP2021)		–	Pg 13.5	**ZCKJ2**	0.310
				ISO M20 x 1.5	**ZCKJ2H29**	0.310
				1/2" NPT	**ZCKJ2H7**	0.310
	2-pole NC + NO break before make, slow break (XE2NP2151)		⊖	Pg 13.5	**ZCKJ5**	0.310
				ISO M20 x 1.5	**ZCKJ5H29**	0.310
				1/2" NPT	**ZCKJ5H7**	0.310
	2-pole NO + NC make before break, slow break (XE2NP2161)		⊖	Pg 13.5	**ZCKJ6**	0.310
				ISO M20 x 1.5	**ZCKJ6H29**	0.310
				1/2" NPT	**ZCKJ6H7**	0.310
	2-pole NC + NC simultaneous, slow break (XE2NP2141)		⊖	Pg 13.5	**ZCKJ7**	0.310
				ISO M20 x 1.5	**ZCKJ7H29**	0.310
				1/2" NPT	**ZCKJ7H7**	0.310
	2-pole NO + NO simultaneous, slow break (XE2NP2131)		–	Pg 13.5	**ZCKJ8**	0.310
				ISO M20 x 1.5	**ZCKJ8H29**	0.310
				1/2" NPT	**ZCKJ8H7**	0.310
	2-pole NC + NC snap action (XE2SP2141)		⊖	Pg 13.5	**ZCKJ9**	0.310
				ISO M20 x 1.5	**ZCKJ9H29**	0.310
				1/2" NPT	**ZCKJ9H7**	0.310
2 step	Double-pole 2 CO staggered, snap action (XESP2031)		–	Pg 13.5	**ZCKJ4**	0.310
				ISO M20 x 1.5	**ZCKJ4H29**	0.310
				1/2" NPT	**ZCKJ4H7**	0.310
Plug-in bodies						
1 step	Single-pole CO snap action		–	Pg 13.5	**ZCKJ11**	0.300
				ISO M20 x 1.5	**ZCKJ11H29**	0.300
				1/2" NPT	**ZCKJ11H7**	0.300
	Double-pole 2 CO simultaneous snap action		–	Pg 13.5	**ZCKJ21**	0.300
				ISO M20 x 1.5	**ZCKJ21H29**	0.300
				1/2" NPT	**ZCKJ21H7**	0.300
2 step	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ41**	0.300
				ISO M20 x 1.5	**ZCKJ41H29**	0.300
				1/2" NPT	**ZCKJ41H7**	0.300

Bodies with contacts With spring return rotary head (without operating lever)

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
Fixed body						
2 step 1 from the left AND 1 from the right	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ4046**	0.455
				ISO M20 x 1.5	**ZCKJ4046H29**	0.455
				1/2" NPT	**ZCKJ4046H7**	0.455
Plug-in body						
2 step 1 from the left AND 1 from the right	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ41046**	0.465
				ISO M20 x 1.5	**ZCKJ41046H29**	0.465
				1/2" NPT	**ZCKJ41046H7**	0.465

(1) ⊖: head assuring positive opening operation.

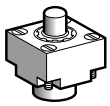
Operation: pages 118 and 119

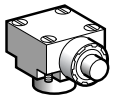
Dimensions: pages 120 and 121

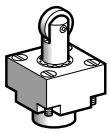
Limit switches

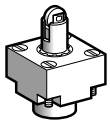
OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body

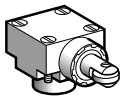
Adaptable sub-assemblies for low temperature applications (- 40°C)

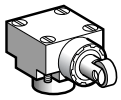

ZCKE616

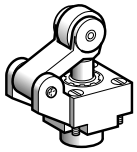

ZCKE636

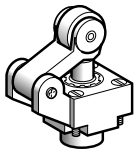

ZCKE626

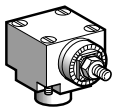

ZCKE676

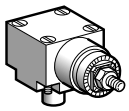

ZCKE646

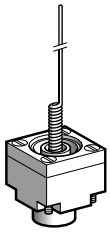

ZCKE656

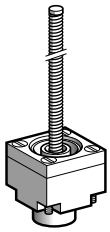

ZCKE216


ZCKE236


ZCKE056


ZCKE096


ZCKE066


ZCKE086

Plunger heads

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

Rotary heads (without operating lever)

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 134)	ZCKJ●, ZCKJ●●	1.5 m/s by 30° cam	⊖	**ZCKE056**	0.165
Stay put, for actuation from left **AND** right (see page 134)	ZCKJ1, J11 ZCKJ2, J21	0.5 m/s	–	**ZCKE096**	0.190

Multi-directional heads

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

(1) ⊖: head assuring positive opening operation.

Operation: pages 118 and 119
Dimensions: pages 120 and 121

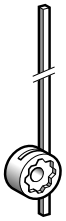
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body

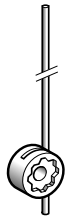
Adaptable sub-assemblies for low temperature applications (- 40°C)

ZCKY1●

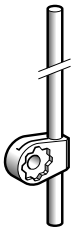
ZCKY4●



ZCKY51



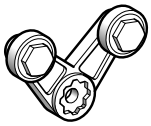
ZCKY5●



ZCKY59

ZCKY81

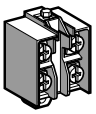
ZCKY91



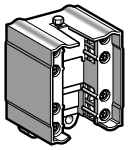
ZCKY71

ZCKY61

XE2SP21●1



XE2NP21●1

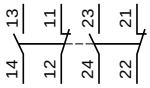
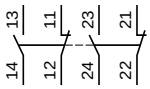


XESP20●1

Operating levers for rotary heads

Description		Positive operation (1)	Reference	Weight kg
For actuation by 30° cam				
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)	Ø 3 mm steel, L = 125 mm	–	**ZCKY53**	0.025
	Ø 3 mm glass fibre, L = 125 mm	–	**ZCKY52**	0.020
	Ø 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) thermoplastic	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

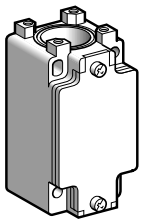
(1) ⊖: NC contact with positive opening operation or sub-assembly assuring positive opening operation.
(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever or its mounting.
(3) Adjustable throughout 360° in 5° steps.

Operation: pages 118 and 119
Dimensions: pages 120 and 121

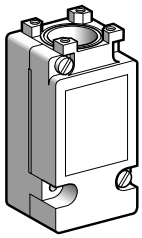
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body

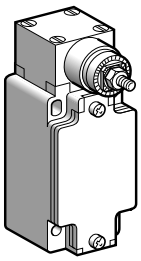
Adaptable sub-assemblies for high temperature applications (+ 120°C)



ZCKJ●

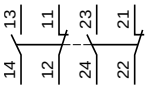
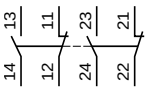
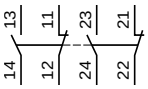
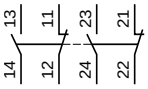


ZCKJ●15

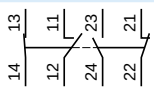
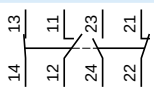


ZCKJ4045

Bodies with contacts — For plunger or rotary head

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
Fixed bodies						
1 step	2-pole NC + NO snap action (XE2SP2151)		⊖	Pg 13.5	**ZCKJ1**	0.310
				ISO M20 x 1.5	**ZCKJ1H29**	0.310
				1/2" NPT	**ZCKJ1H7**	0.310
	Double-pole 2 CO simultaneous, snap action (XESP20215)		–	Pg 13.5	**ZCKJ25**	0.310
				ISO M20 x 1.5	**ZCKJ25H29**	0.310
				1/2" NPT	**ZCKJ25H7**	0.310
	2-pole NC + NO break before make, slow break (XE2NP2151)		⊖	Pg 13.5	**ZCKJ5**	0.310
				ISO M20 x 1.5	**ZCKJ5H29**	0.310
				1/2" NPT	**ZCKJ5H7**	0.310
	2-pole NO + NC make before break, slow break (XE2NP2161)		⊖	Pg 13.5	**ZCKJ6**	0.310
				ISO M20 x 1.5	**ZCKJ6H29**	0.310
				1/2" NPT	**ZCKJ6H7**	0.310
	2-pole NC + NC simultaneous, slow break (XE2NP2141)		⊖	Pg 13.5	**ZCKJ7**	0.310
				ISO M20 x 1.5	**ZCKJ7H29**	0.310
				1/2" NPT	**ZCKJ7H7**	0.310
	2-pole NO + NO simultaneous, slow break (XE2NP2131)		–	Pg 13.5	**ZCKJ8**	0.310
				ISO M20 x 1.5	**ZCKJ8H29**	0.310
				1/2" NPT	**ZCKJ8H7**	0.310
	2-pole NC + NC snap action (XE2SP2141)		⊖	Pg 13.5	**ZCKJ9**	0.310
				ISO M20 x 1.5	**ZCKJ9H29**	0.310
				1/2" NPT	**ZCKJ9H7**	0.310
2 step	Double-pole 2 CO staggered, snap action (XESP20315)		–	Pg 13.5	**ZCKJ45**	0.310
				ISO M20 x 1.5	**ZCKJ45H29**	0.310
				1/2" NPT	**ZCKJ45H7**	0.310
Plug-in bodies						
1 step	Single-pole CO snap action		–	Pg 13.5	**ZCKJ115**	0.300
				ISO M20 x 1.5	**ZCKJ115H29**	0.300
				1/2" NPT	**ZCKJ115H7**	0.300
	Double-pole 2 CO simultaneous, snap action		–	Pg 13.5	**ZCKJ215**	0.300
				ISO M20 x 1.5	**ZCKJ215H29**	0.300
				1/2" NPT	**ZCKJ215H7**	0.300
2 step	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ415**	0.300
				ISO M20 x 1.5	**ZCKJ415H29**	0.300
				1/2" NPT	**ZCKJ415H7**	0.300

Bodies with contacts — With spring return rotary head (without operating lever)

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
Fixed body						
2 step 1 from the left **AND** 1 from the right	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ4045**	0.455
				ISO M20 x 1.5	**ZCKJ4045H29**	0.455
				1/2" NPT	**ZCKJ4045H7**	0.455
Plug-in body						
2 step 1 from the left **AND** 1 from the right	Double-pole 2 CO staggered, snap action		–	Pg 13.5	**ZCKJ41045**	0.465
				ISO M20 x 1.5	**ZCKJ41045H29**	0.465
				1/2" NPT	**ZCKJ41045H7**	0.465

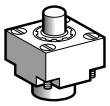
(1) ⊖: head assuring positive opening operation.

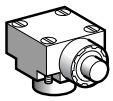
Operation: pages 118 and 119
Dimensions: pages 120 and 121

Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body

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


ZCKE615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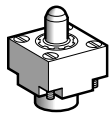
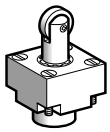

ZCKE665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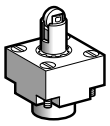
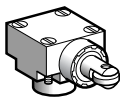
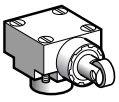
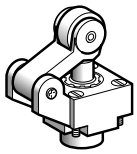
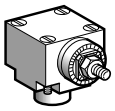
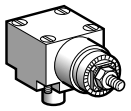

ZCKE675


ZCKE645


ZCKE655


ZCKE235


ZCKE055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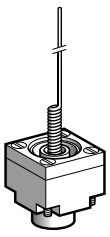
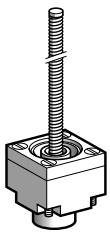

ZCKE065


ZCKE085

Plunger heads

Type of operator		Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
For actuation on end						
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
For actuation by 30° cam						
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

Rotary heads (without operating lever)

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 134)	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 134)	ZCKJ1, J2, ZCKJ115, J215	0.5 m/s	–	**ZCKE095**	0.190

Multi-directional heads

Type of operator	Compatible bodies	Maximum actuation speed	Positive operation (1)	Reference	Weight kg
For actuation by any moving part					
"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.

Operation: pages 118 and 119
Dimensions: pages 120 and 121

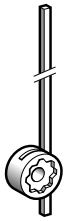
Limit switches

OsiSense XC Standard, industrial format EN 50041
Metal, conforming to CENELEC EN 50041, type XCKJ
Fixed or plug-in body

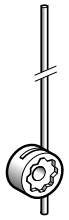
Adaptable sub-assemblies for high temperature applications (+ 120°C)

ZCKY1●

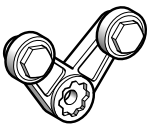
ZCKY43



ZCKY51



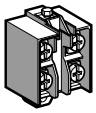
ZCKY5●



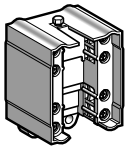
ZCKY715

ZCKY615

XE2SP21●1



XE2NP21●1

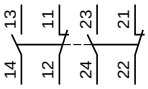
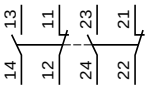


XESP20●15

Operating levers for rotary heads

Description		Positive operation (1)	Reference	Weight kg
For actuation by 30° cam				
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
For actuation by any moving part				
Square rod (2)	⧄ 3 mm steel, L = 125 mm	–	**ZCKY51**	0.025
Round rod (2)	Ø 3 mm steel, L = 125 mm	–	**ZCKY53**	0.025
	Ø 3 mm glass fibre, L = 125 mm	–	**ZCKY52**	0.020
For actuation by specific cam (only for operation with head ZCKE095)				
Forked arm with rollers (2) thermoplastic	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.

Operation: pages 118 and 119
Dimensions: pages 120 and 121

Presentation

Electromechanical detection

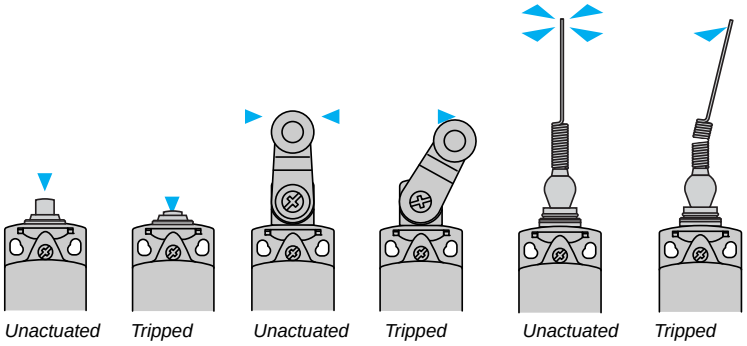
Limit switches are used in all automated installations and also in a wide variety of applications, due to the numerous advantages inherent to their technology.
They transmit data to the logic processing system regarding:
- presence/absence,
- passing,
- positioning,
- end of travel.

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

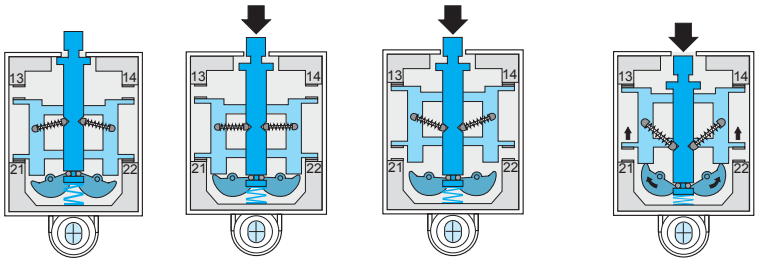
Rated value of a quantity	■ This replaces the term “nominal value”. ■ It is the fixed value for a specific function.
Utilisation categories:	■ AC-15 replaces AC-11: control of an electromagnet on AC, test 10 Ie/Ie. ■ AC-12: control of a resistive load on AC or static load isolated by opto-coupler. ■ DC-13 replaces DC-11: control of an electromagnet on DC, test Ie/Ie.
Positive opening travel	■ Minimum travel from the initial movement of contact actuator to the position required to accomplish positive opening operation.
Positive opening force	■ The force required on the contact actuator to accomplish positive opening operation.
Switching capacity	■ Ithe is no longer a rated value but a conventional current used for heating tests. **Example:** for category A300 the corresponding operational current, Ie maximum, is 6 A-120 V or 3 A-240 V, the equivalent Ithe being 10 A.
Positive opening operation	■ 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). ■ 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.

Limit switches
OsiSense XC
General

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.

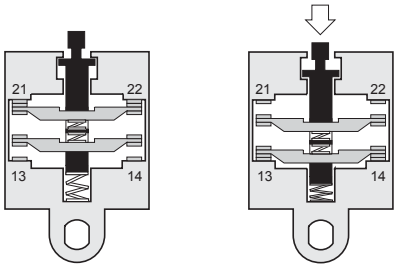


Unactuated state *Approach travel* *Contact change of state* *Positive opening*

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*

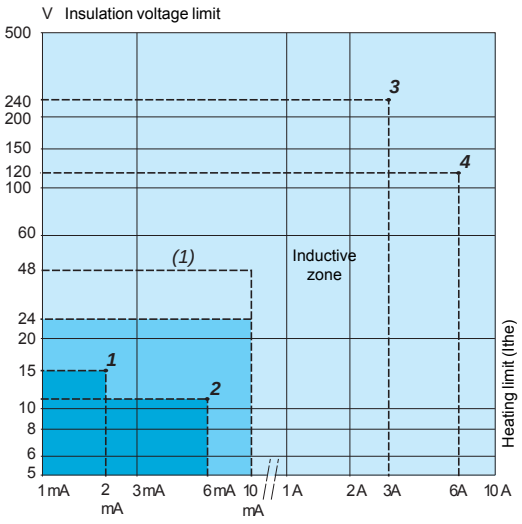
A300	240 V	3 A	B300	240 V	1.5 A
Q300	250 V	0.27 A	R300	250 V	0.13 A

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
Q300	125 V	0.55 A	R300	125 V	0.27 A

Electrical durability for small loads

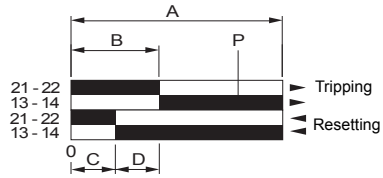
- The use of limit switches with programmable controllers is becoming more common.
- With small loads, limit switches offer the following levels of reliability:
  - failure rate of less than 1 for 100 million operating cycles using snap action contacts (contacts XE2SP),
  - failure rate of less than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

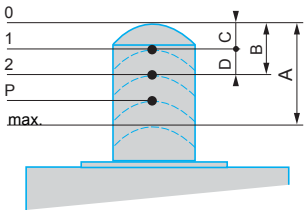


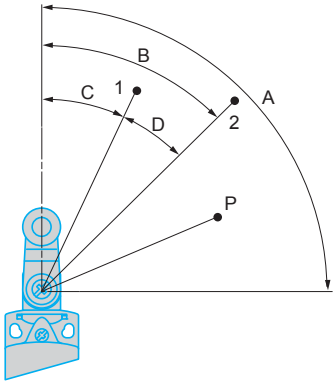
		Range of use	
Standard contacts Continuous service (frequent switching)	XE2SP2151, P3151		
	XE2NP●●●●		
	Contacts of XCMD XE3●P●●●●		
Gold flashed contacts on resistive load	Occasional service Infrequent switching, ≤ 1 operating cycle/ day, and/or corrosive atmosphere		(1)

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

Contact blocks (continued)







Functional diagrams of snap action contacts

■ **Example: NC + NO**

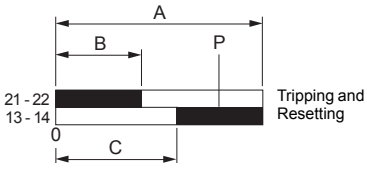
A - Maximum travel of operator in millimetres or degrees.
B - Tripping travel of contact.
C - Resetting travel of contact.
D - Differential travel = B - C.
P - Point from which positive opening is assured.

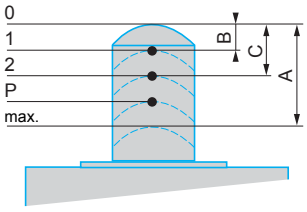
□ Linear movement (plunger)

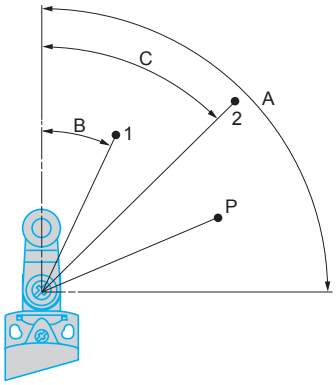
1 - Resetting point of contact.
2 - Tripping point of contact.
A - Maximum travel of operator in millimetres.
B - Tripping travel of contact.
C - Resetting travel of contact.
D - Differential travel = B - C.
P - Point from which positive opening is assured.

□ 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.

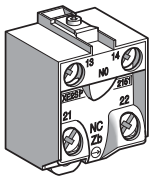
□ Linear movement (plunger)

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.

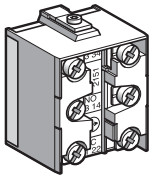
□ Rotary movement (lever)

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

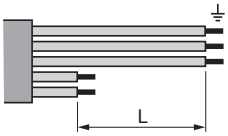


XE3●P screw clamp terminal connections

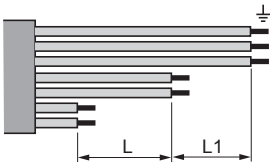
Mounting

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,

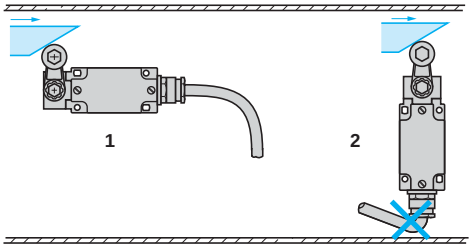


□ for **XE3●P**, L = 14 mm, L1 = 11 mm.



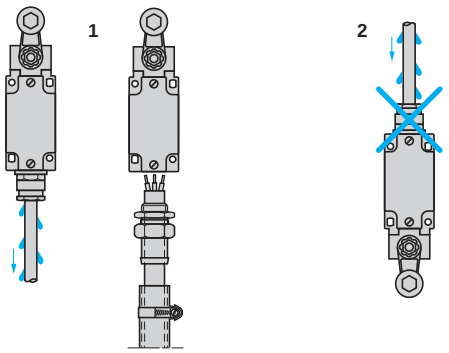
Sweep of connecting cable

1 *Recommended*
2 *To be avoided*



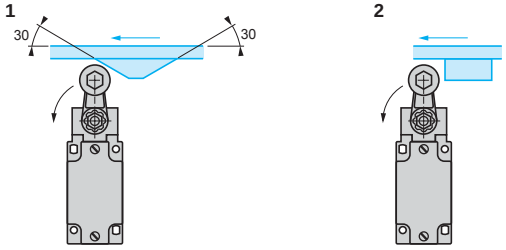
Position of cable gland

1 *Recommended*
2 *To be avoided*



Type of cam

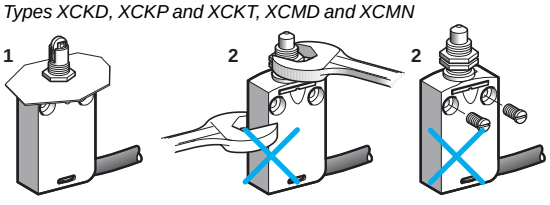
1 *Recommended*
2 *To be avoided*



Mounting and fixing limit switches by the head

1 *Recommended*
2 *Forbidden*

Types XCKD, XCKP and XCKT, XCMD and XCMN



Limit switches
OsiSense XC
General

Setting-up

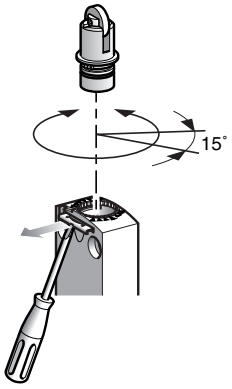
Tightening torque

- 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.

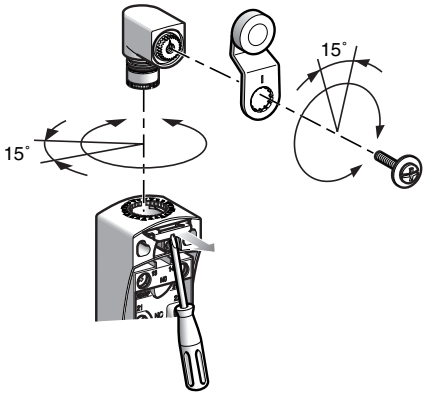
Range	Item	Torque (N.m)	
		Min.	Max.
Compact design XCKD, XCKP, XCKT	Cover	0.8	1.2
	Fixing screw for lever on rotary head	1	1.5
Miniature design XCMD, XCMN	–	–	–
	Fixing screw for lever on rotary head	1	1.5
Compact design XCKN	Cover	0.8	1.2
	Fixing screw for lever on rotary head	1	1.5
Classic design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

Types XCKD, XCKP, XCKT, XCMD

- Adjustable in 3 planes:



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

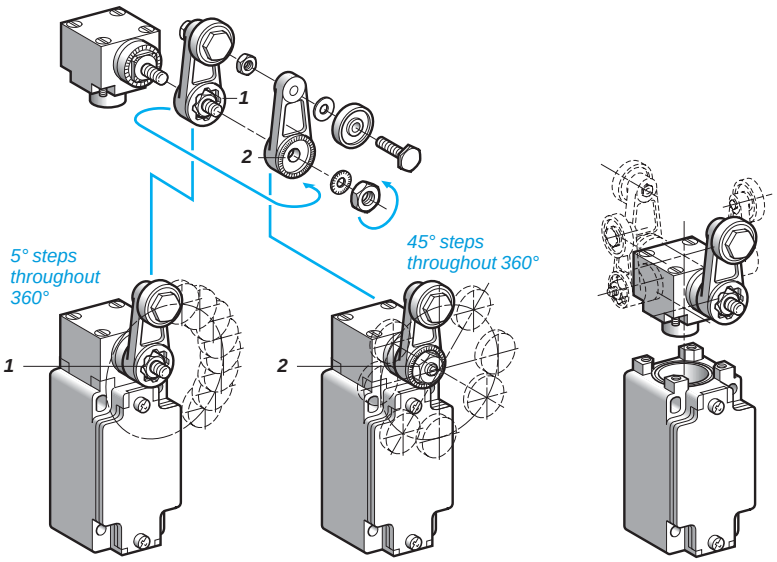


All the levers can be adjusted in 15° steps throughout 360°, in relation to the horizontal axis of the head.

Type XCKJ

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

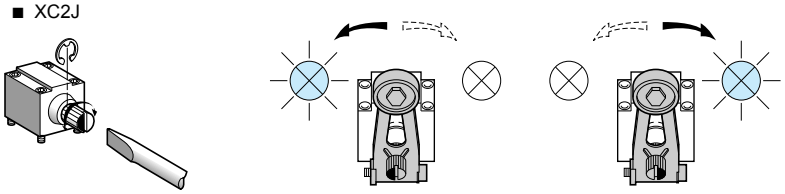
1 *Reversed* α = 5°
2 *Forward* α = 45°



Setting-up (continued)

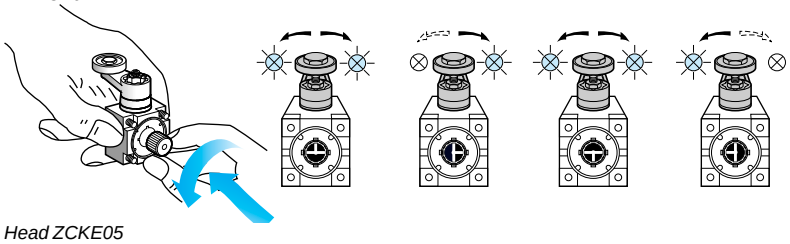
Direction of actuation programming

■ XC2J



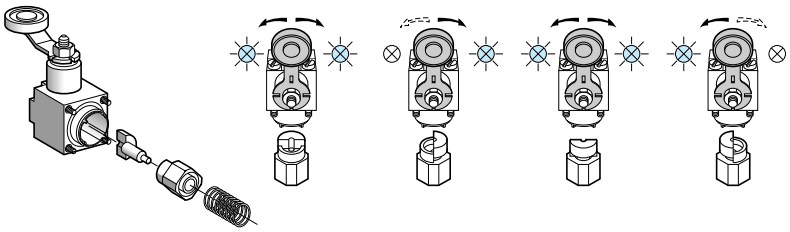
Head ZC2JE05

■ XCKJ



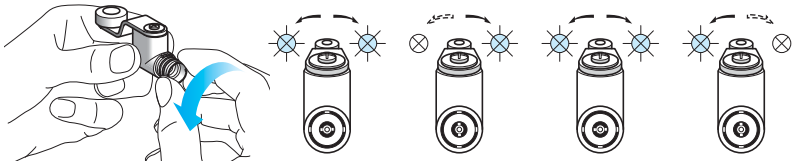
Head ZCKE05

■ XCKS



Head ZCKD05

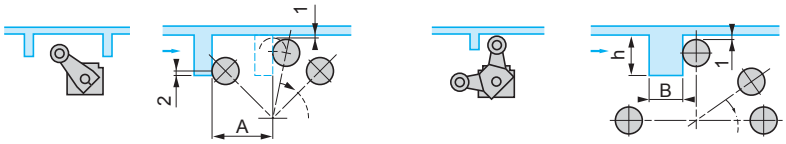
■ XCKD, XCKP, XCKT and XCMD



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 Schneider Electric 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

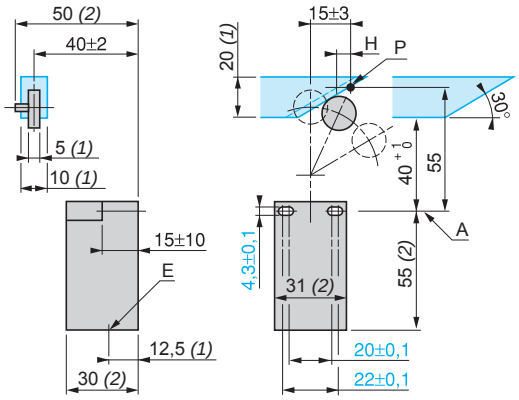
The European standards organisation CENELEC, which has 14 member countries, has defined in this standard the first type of limit switch.

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

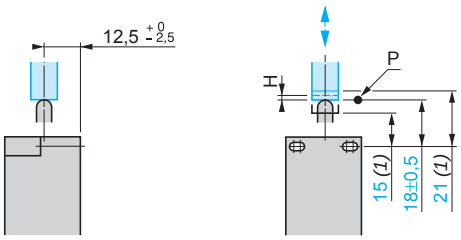
(1) Minimum value
(2) Maximum value

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

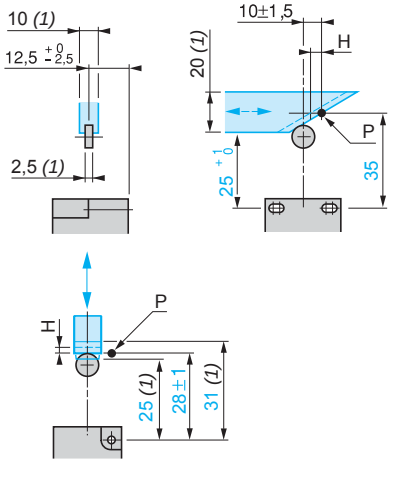
Form A, with roller lever



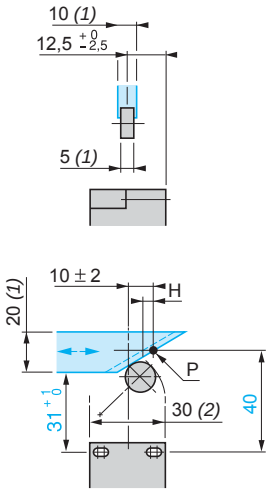
Form B, with end plunger (rounded)



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.

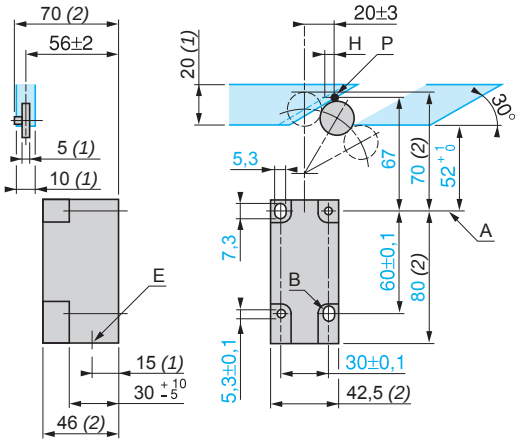
It defines 6 variants of devices (forms A, B, C, D, F, G). Limit switches XCKJ and XCKS conform to standard EN 50041.

(1) Minimum value
(2) Maximum value

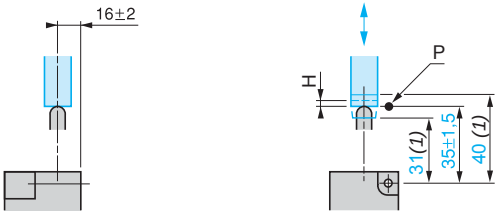
A: reference axis
B: optional elongated holes
H: differential travel
P: tripping point
E: cable entry

Za: tripping zone
Sa: tripping threshold

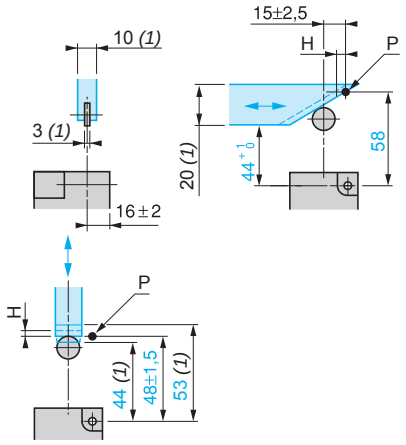
Form A, with roller lever



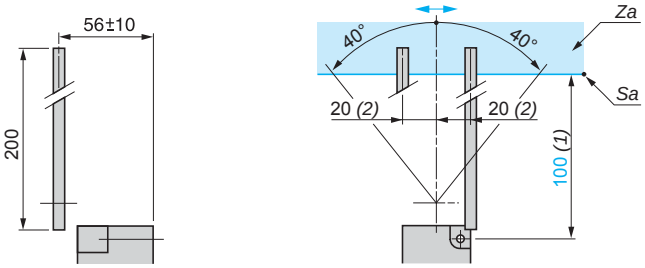
Form B, with end plunger (rounded)



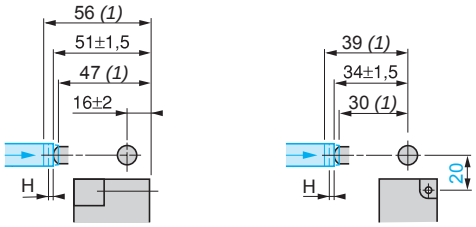
Form C, with end roller plunger



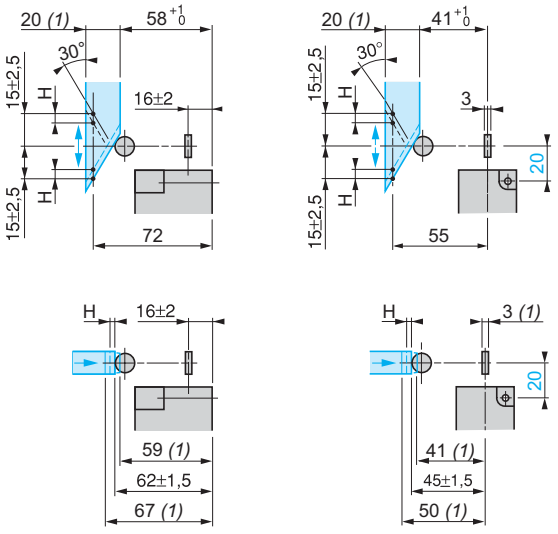
Form D, with rod lever



Form F, with side plunger (rounded)



Form G, with side roller plunger



Depending on the climatic and environmental conditions in which the equipment is placed, Telemecanique Sensors can offer specially adapted products to meet your requirements.

In order to make the correct choice of protective finish, two points should be remembered:
- the prevailing climate of the country is never the only criterion,
- only the atmosphere in the immediate vicinity of the equipment need be considered.

All climates treatment “TC”

This is the standard treatment for Telemecanique Sensors brand equipment and is suitable for the vast majority of applications. It is the equivalent of treatments described as “Klimafest”, “Climateproof”.
In particular, it meets the requirements specified in the following publications:
- Publication UTE C 63-100 (method I), successive cycles of humid heat at:
+ 40 °C and 95 % relative humidity.
- DIN 50016 - Variations of ambient conditions within a climatic chamber:
+ 23 °C and 83 % relative humidity,
+ 40 °C and 92 % relative humidity.

It also meets the requirements of the following marine classification societies:
BV-LR-GL-DNV-RINA.

Characteristics

- Steel components are usually treated with zinc. When they have a mechanical function, they may also be painted.
- Insulating materials are selected for their high electrical, dielectric and mechanical characteristics.
- Metal enclosures have a stoved paint finish, applied over a primary phosphate protective coat, or are galvanised (e.g. some prefabricated busbar trunking components).

Limits for use of “TC” (All climates) treatment

- “TC” treatment is suitable for the following temperatures and humidity:

Temperature (°C)	**Relative humidity** (%)
20	95
40	80
50	50

“TC” treatment is therefore suitable for all latitudes and in particular tropical and equatorial regions where the equipment is mounted in normally ventilated industrial premises. Being sheltered from external climatic conditions, temperature variations are small, the risk of condensation is minimised and the risk of dripping water is virtually non-existent.

Extension of use of “TC” (All climates) treatment

In cases where the humidity around the equipment exceeds the conditions described above, or in equatorial regions if the equipment is mounted outdoors, or if it is placed in a very humid location (laundries, sugar refineries, steam rooms, etc.), “TC” treatment can still be used if the following precautions are taken:
- The enclosure in which the equipment is mounted must be protected with a “TH” finish (see next page) and must be well ventilated to avoid condensation and dripping water (e.g. enclosure base plate mounted on spacers).
- Components mounted inside the enclosure must have a “TC” finish.
- If the equipment is to be switched off for long periods, a heater must be provided (0.2 to 0.5 kW per square decimetre of enclosure), that switches on automatically when the equipment is turned off. This heater keeps the inside of the enclosure at a temperature slightly higher than the outside surrounding temperature, thereby avoiding any risk of condensation and dripping water (the heat produced by the equipment itself during normal running is sufficient to provide this temperature difference).
- Special considerations for “Operator dialog” and “Detection” products:
for certain pilot devices, the use of “TC” treatment can be extended to outdoor use provided their enclosure is made of light alloys, zinc alloys or plastic material. In this case, it is also essential to ensure that the degree of protection against penetration of liquids and solid objects is suitable for the applications involved.

"TH" treatment for hot and humid environments

This treatment is suitable for hot and humid atmospheres where installations are regularly subject to condensation, dripping water and the risk of fungi.

In addition, plastic insulating components are resistant to attacks from insects such as termites and cockroaches. These properties have often led to this treatment being described as "Tropical Finish", but this does not mean that all equipment installed in tropical and equatorial regions must systematically have undergone "TH" treatment. On the other hand, certain operating conditions in temperate climates may well require the use of "TH" treated equipment (see limitations for use of "TC" treatment).

Special characteristics of "TH" treatment

■ All insulating components are made of materials which are either resistant to fungi or treated with a fungicide, and which have increased resistance to creepage (Standards IEC 60112, NF C 26-220, DIN 5348).
■ Metal enclosures receive a top-coat of stoved, fungicidal paint, applied over a rust inhibiting undercoat. Components with "TH" treatment may be subject to a surcharge *(1)*. Please consult your Customer Care Centre.

Protective treatment selection guide

Surrounding environment	Duty cycle	Internal heating of enclosure when not in use	Type of climate	Protective treatment of equipment	Protective treatment of enclosure
Indoors					
No dripping water or condensation	Unimportant	Not necessary	Unimportant	"TC"	"TC"
Presence of dripping water or condensation	Frequent switching off for periods of more than 1 day	No	Temperate	"TC"	"TH"
			Equatorial	"TH"	"TH"
		Yes	Unimportant	"TC"	"TH"
	Continuous	Not necessary	Unimportant	"TC"	"TH"
Outdoors (sheltered)					
No dripping water or dew	Unimportant	Not necessary	Temperate	"TC"	"TC"
			Equatorial	"TH"	"TH"
Exposed outdoors or near the sea					
Frequent and regular presence of dripping water or dew	Frequent switching off for periods of more than 1 day	No	Temperate	"TC"	"TH"
			Equatorial	"TH"	"TH"
		Yes	Unimportant	"TC"	"TH"
	Continuous	Not necessary	Unimportant	"TC"	"TH"

These treatments cover, in particular, the applications defined by methods I and II of guide UTE C 63-100.

Special precautions for electronic equipment

Electronic products always meet the requirements of "TC" treatment. A number of them are "TH" treated as standard.

Some electronic products (for example: programmable controllers, flush mountable controllers CCX and flush mountable operator terminals XBT) require the use of an enclosure providing a degree of protection to at least IP 54, as defined by standards IEC 60664 and NF C 20 040, for use in industrial applications or in environmental conditions requiring "TH" treatment.

These electronic products, including flush mountable products, must have a degree of protection to at least IP 20 (provided either by their own enclosure or by their installation method) for restricted access locations where the degree of pollution does not exceed 2 (a test booth not containing machinery or other dust producing activities, for example).

Special treatments

For particularly harsh industrial environments, Telemecanique Sensors is able to offer special protective treatments. Please consult your Customer Care Centre.

(1) A large number of the Telemecanique Sensors brand products are "TH" treated as standard and are, therefore, not subject to a surcharge.

Standardisation

Conformity to standards

Telemecanique Sensors products satisfy, in the majority of cases, national (for example: BS in Great Britain, NF in France, DIN in Germany), European (for example: CENELEC) or international (IEC) standards. These product standards precisely define the performance of the designated products (such as IEC 60947 for low voltage equipment).
When used correctly, as designated by the manufacturer and in accordance with regulations and correct practices, these products will allow users to build equipment, machine systems or installations that conform to their appropriate standards (for example: IEC 60204-1, relating to electrical equipment used on industrial machines).
Telemecanique Sensors is able to provide proof of conformity of its production to the standards it has chosen to comply with, through its quality assurance system.
On request, and depending on the situation, Telemecanique Sensors can provide the following:
- a declaration of conformity,
- a certificate of conformity (ASEFA/LOVAG),
- a homologation certificate or approval, in the countries where this procedure is required or for particular specifications, such as those existing in the merchant navy.

Code	Certification authority		Country
	Name	Abbreviation	
ANSI	American National Standards Institute	ANSI	USA
BS	British Standards Institution	BSI	Great Britain
CEI	Comitato Elettrotecnico Italiano	CEI	Italy
DIN/VDE	Verband Deutscher Electrotechniker	VDE	Germany
EN	Comité Européen de Normalisation Electrotechnique	CENELEC	Europe
GOST	Gosudarstvenne Komitet Standartov	GOST	Russia
IEC	International Electrotechnical Commission	IEC	Worldwide
JIS	Japanese Industrial Standards Committee	JISC	Japan
NBN	Institut Belge de Normalisation	IBN	Belgium
NEN	Nederlands Normalisatie Institut	NNI	Netherlands
NF	Union Technique de l'Electricité	UTE	France
SAA	Standards Association of Australia	SAA	Australia
UNE	Asociacion Española de Normalizacion y Certificacion	AENOR	Spain

European EN standards

These are technical specifications established in conjunction with, and with approval of, the relative bodies within the various CENELEC member countries (European Union, European Free Trade Association and many central and eastern European countries having «member» or «affiliated» status). Prepared in accordance with the principle of consensus, the European standards are the result of a weighted majority vote. Such adopted standards are then integrated into the national collection of standards, and contradictory national standards are withdrawn.
European standards incorporated within the French collection of standards carry the prefix NF EN. At the 'Union Technique de l'Electricité' *(Technical Union of Electricity)* (UTE), the French version of a corresponding European standard carries a dual number: European reference (NF EN …) and classification index (C …).
Therefore, the standard NF EN 60947-4-1 relating to motor contactors and starters, effectively constitutes the French version of the European standard EN 60947-4-1 and carries the UTE classification C 63-110.
This standard is identical to the British standard BS EN 60947-4-1 or the German standard DIN EN 60947-4-1.
Whenever reasonably practical, European standards reflect the international standards (IEC).
With regard to automation system components and distribution equipment, in addition to complying with the requirements of French NF standards, Telemecanique Sensors brand components conform to the standards of all other major industrial countries.

Regulations

European Directives

Opening up of European markets assumes harmonisation of the regulations pertaining to each of the member countries of the European Union.
The purpose of the European Directive is to eliminate obstacles hindering the free circulation of goods within the European Union, and it must be applied in all member countries. Member countries are obliged to transcribe each Directive into their national legislation and to simultaneously withdraw any contradictory regulations. The Directives, in particular those of a technical nature which concern us, only establish the objectives to be achieved, referred to as "essential requirements".
The manufacturer must take all the necessary measures to ensure that his products conform to the requirements of each Directive applicable to his production.
As a general rule, the manufacturer certifies conformity to the essential requirements of the Directive(s) for his product by affixing the CE mark.
The CE mark is affixed to Telemecanique Sensors brand products concerned, in order to comply with French and European regulations.

Significance of the CE mark
- The CE mark affixed to a product signifies that the manufacturer certifies that the product conforms to the relevant European Directive(s) which concern it; this condition must be met to allow free distribution and circulation within the countries of the European Union of any product subject to one or more of the E.U. Directives.
- The CE mark is intended solely for national market control authorities.
- The CE mark must not be confused with a conformity marking.

European Directives (continued)

For electrical equipment, only conformity to standards signifies that the product is suitable for its designated function, and only the guarantee of an established manufacturer can provide a high level of quality assurance.
For Telemecanique Sensors brand products, one or several Directives are likely to be applicable, depending on the product, and in particular:

- the Low Voltage Directive 2006/95/EC: the CE mark relating to this Directive has been compulsory since 16th January 2007.
- the Electromagnetic Compatibility Directive 89/336/EEC, amended by Directives 92/31/EEC and 93/68/EEC: the CE mark on products covered by this Directive has been compulsory since 1st January 1996.

ASEFA-LOVAG certification

The function of ASEFA (Association des Stations d'Essais Française d'Appareils électriques - *Association of French Testing Stations for Low Voltage Industrial Electrical Equipment)* is to carry out tests of conformity to standards and to issue certificates of conformity and test reports.
ASEFA laboratories are authorised by the French authorisation committee (COFRAC).
ASEFA is now a member of the European agreement group LOVAG (Low Voltage Agreement Group). This means that any certificates issued by LOVAG/ASEFA are recognised by all the authorities which are members of the group and carry the same validity as those issued by any of the member authorities.

Quality labels

When components can be used in domestic and similar applications, it is sometimes recommended that a "Quality label" be obtained, which is a form of certification of conformity.

Code	Quality label	Country
CEBEC	Comité Electrotechnique Belge	Belgium
KEMA-KEUR	Keuring van Electrotechnische Materialen	Netherlands
NF	Union Technique de l'Electricité	France
ÖVE	Österreichischer Verband für Electrotechnik	Austria
SEMKO	Svenska Electriska Materiel Kontrollanatalten	Sweden

Product certifications

In some countries, the certification of certain electrical components is a legal requirement. In this case, a certificate of conformity to the standard is issued by the official test authority.
Each certified device must bear the relevant certification symbols when these are mandatory:

Code	Certification authority	Country
CSA	Canadian Standards Association	Canada
UL	Underwriters Laboratories	USA
CCC	China Compulsory Certification	China

Note on certifications issued by the Underwriters Laboratories (UL). There are two levels of approval:

"Recognized" (FL) — The component is fully approved for inclusion in equipment built in a workshop, where the operating limits are known by the equipment manufacturer and where its use within such limits is acceptable by the Underwriters Laboratories.
The component is not approved as a "Product for general use" because its manufacturing characteristics are incomplete or its application possibilities are limited.
A "Recognized" component does not necessarily carry the certification symbol.

"Listed" (UL) — The component conforms to all the requirements of the classification applicable to it and may therefore be used both as a "Product for general use" and as a component in assembled equipment. A "Listed" component must carry the certification symbol.

Marine classification societies

Prior approval (= certification) by certain marine classification societies is generally required for electrical equipment which is intended for use on board merchant vessels.

Code	Classification authority	Country
BV	Bureau Veritas	France
DNV	Det Norske Veritas	Norway
GL	Germanischer Lloyd	Germany
LR	Lloyd's Register	Great Britain
NKK	Nippon Kaiji Kyokaï	Japan
RINA	Registro Italiano Navale	Italy
RRS	Register of Shipping	Russia

Note

For further details on a specific product, please refer to the "Characteristics" pages in this catalogue or consult your Customer Care Centre.

Degrees of protection against the penetration of solid bodies, water and personnel access to live parts

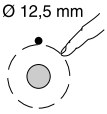
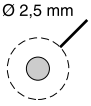
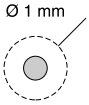
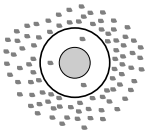
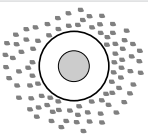
The European standard EN 60529 dated October 1991, IEC publication 529 (2nd edition - November 1989), defines a coding system (IP code) for indicating the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water. This standard does not apply to protection against the risk of explosion or conditions such as humidity, corrosive gasses, fungi or vermin.
Certain equipment is designed to be mounted on an enclosure which will contribute towards achieving the required degree of protection (example : control devices mounted on an enclosure).
Different parts of an equipment can have different degrees of protection (example : enclosure with an opening in the base).
Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.
Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.

IP ●●● code

The IP code comprises **2 characteristic numerals** (e.g. **IP 55**) and may include **an additional letter** when the actual protection of personnel against direct contact with live parts is better than that indicated by the first numeral (e.g. IP 20C).
Any characteristic numeral which is unspecified is replaced by an X (e.g. IP XXB).

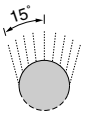
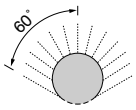
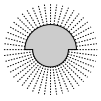
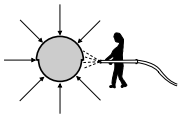
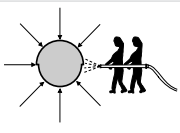
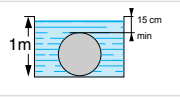
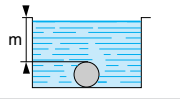
1st characteristic numeral:

corresponds to protection of the equipment against penetration of solid objects and protection of personnel against direct contact with live parts.

	Protection of the equipment		Protection of personnel
0	Non-protected		Non-protected
1	Ø 50 mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm	Protected against direct contact with the back of the hand (accidental contacts).
2	Ø 12,5 mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm.	Protected against direct finger contact.
3	Ø 2,5 mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.	Protected against direct contact with a Ø 2.5 mm tool.
4	Ø 1 mm 	Protected against the penetration of solid objects having a diameter greater than or equal to 1 mm.	Protected against direct contact with a Ø 1 mm wire.
5		Dust protected (no harmful deposits).	Protected against direct contact with a Ø 1 mm wire.
6		Dust tight.	Protected against direct contact with a Ø 1 mm wire.

2nd characteristic numeral:

corresponds to protection of the equipment against penetration of water with harmful effects.

0	Non-protected	
1		Protected against vertical dripping water, (condensation).
2		Protected against dripping water at an angle of up to 15°.
3		Protected against rain at an angle of up to 60°.
4		Protected against splashing water in all directions.
5		Protected against water jets in all directions.
6		Protected against powerful jets of water and waves.
7		Protected against the effects of temporary immersion.
8		Protected against the effects of prolonged immersion under specified conditions.

Additional letter:

corresponds to protection of personnel against direct contact with live parts.

A	With the back of the hand.
B	With the finger.
C	With a Ø 2.5 mm tool.
D	With a Ø 1 mm wire.

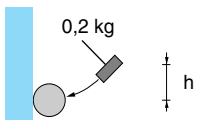
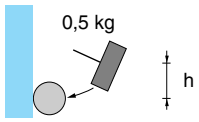
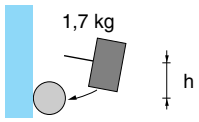
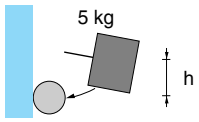
Degrees of protection against mechanical impact

The European standard EN 50102 dated March 1995 defines a coding system (IK code) for indicating the degree of protection provided by electrical equipment enclosures against external mechanical impact.
Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.
Practical guide UTE C 15-103 shows, in the form of tables, the characteristics required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.

IK ●● code

The IK code comprises **2 characteristic numerals** (e.g. **IK 05**).

2 characteristic numerals:
corresponding to a value of impact energy.

		h (cm)	Energy (J)
00	Non-protected		
01		7.5	0.15
02		10	0.2
03		17.5	0.35
04		25	0.5
05		35	0.7
06		20	1
07		40	2
08		30	5
09		20	10
10		40	20

Product reference index

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