

Limit Switches

Catalogue

2008/2009



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Osiswitch® limit switches

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Design		Miniature Osiconcept		Compact Osiconcept	
					
Enclosure		Metal		Plastic, double insulated	
Features		Fixing by the body or by the head			
Osiconcept modularity		Head, body and connection modularity		Head and body modularity	
CENELEC conformity		–	EN 50047	EN 50047 compatible	
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, multi-directional Same heads for ranges XCM D, XCK D, XCK P and XCK T			
Contact blocks	2 snap action contacts with positive opening operation	N/C + N/O; N/C + N/C		N/C + N/O	
	3 snap action contacts with positive opening operation	N/C + N/C + N/O	N/C + N/C + N/O; N/C + N/O + N/O		–
	4 snap action contacts with positive opening operation	N/C + N/C + N/O + N/O –			
	2 slow break contacts with positive opening operation	N/C + N/O break before make	N/C + N/O break before make; N/O + N/C make before break; N/C + N/C simultaneous		
	2 slow break contacts	–	N/O + N/O simultaneous		
	3 slow break contacts with positive opening operation	N/C + N/C + N/O break before make	N/C + N/C + N/O break before make; N/C + N/O + N/O break before make		–
Insulation voltage (Ui) / thermal current (Ithe)		Pre-cabled 2 contacts: 400 V/6 A 3 contacts: 400 V/4 A 4 contacts: 400 V/3 A	Screw terminal 2 contacts: 500 V/10 A 3 contacts: 400 V/6 A	Screw terminal 2 contacts: 500 V/10 A	
		Connector Integral M12, 4-pin: 250 V/3 A Integral M12, 5-pin: 60 V/4 A Remote 7/8" 16UN: 250 V/6 A	Connector Integral M12, 5-pin: 60 V/4 A	Connector Integral M12, 4-pin: 250 V/3 A	–
Degree of protection IP/IK		IP 66, IP 67, IP 68, IK 06	IP 66, IP 67, IK 06	IP 66, IP 67, IK 04	
Connection	Screw terminals	–	1 entry for ISO M16 or M20, Pg 11, Pg 13 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	Yes	–		
	Connector	Integral or remote M12 or remote 7/8" 16UN	Integral M12		–
Type reference		XCM D	XCK D	XCK P	XCK T
Page(s)		5/10	5/30 and 5/34	5/36 and 5/40	5/42

Miniature Optimum		Compact Optimum		Compact Optimum: with reset		Compact Application: with manual reset	
							
Plastic, double insulated				Metal		Plastic, double insulated	
Fixing by the body or by the head		Fixing by the body					
—							
—		EN 50047		—		—	
30 x 50 x 16		31 x 65 x 30					58 x 51 x 30
Linear movement (plunger) Rotary movement (lever) Rotary movement, multi-directional				Linear movement (plunger) Rotary movement (lever)		Linear movement (plunger) Rotary movement (lever) Same heads for ranges XC DR, XC PR and XC TR	
N/C + N/O		N/C + N/O; N/C + N/C				N/C + N/O	
—		Other contacts (1): For complete switches with the following 2-pole contacts: N/C + N/C simultaneous, slow break, N/O + N/C make before break, slow break, N/O + N/O simultaneous, slow break. For complete switches with the following 3-pole contacts: N/C + N/O + N/O snap action, N/C + N/C + N/O snap action, N/C + N/C + N/O break before make, slow break, N/C + N/O + N/O break before make, slow break.				—	
—						—	
—						N/C + N/O break before make	
—						—	
—						—	
Screw terminal 2 contacts: 400 V/6 A		Screw terminal 2 contacts: 500 V/10 A					
—							
IP 65, IK 04				IP 66, IP 67, IK 04			
—		1 entry for ISO M20 or Pg 11 cable gland Other cable entries (1): ISO M16 x 1.5 or PF 1/2 (G 1/2)			1 entry for ISO M20 or Pg 13 cable gland or 1/2" NPT		2 entries for ISO M16 or Pg 11 cable gland or 1/2" NPT (using adaptor)
Yes		—					
—							
XCM N	XCK N	XCN R	XCD R	XCP R	XCT R		
5/26	5/52	5/58	5/62	5/64	5/66		

(1) please consult your Regional Sales Office.

Design

Classic



Enclosure

Features

Variable composition switches

CENELEC or DIN conformity

Body dimensions (w x h x d) in mm

Head

Contact blocks 2 snap action contacts with positive opening operation

3 snap action contacts with positive opening operation

C/O snap action contacts

C/O slow break contacts

2 slow break contacts with positive opening operation

2 slow break contacts

3 slow break contacts with positive opening operation

Insulation voltage (Ui) / thermal current (Ithe)

Degree of protection IP/IK

Connection Screw terminals
(entry for cable gland)

Connector

Type reference

Page(s)

Metal

–

Fixed or plug-in body,
- 40 °C or + 120 °C

Plastic, double
insulated

–

Head + Body + Operator

–

EN 50041

63 x 64 x 30

52 x 72 x 30

40 x 77 x 44
42.5 x 84 x 36

40 x 72.5 x 36

Linear movement (plunger)

Rotary movement (lever)

Rotary movement, multi-directional

N/C + N/O; N/C + N/C

N/C + N/O

N/C + N/O; N/C + N/C

N/C + N/C + N/O; N/C + N/O + N/O

–

2 C/O

–

N/C + N/O break before make
N/O + N/C make before break
N/C + N/C simultaneous

N/O + N/O simultaneous

N/C + N/C + N/O break before make
N/C + N/O + N/O break before make

Screw terminal
2 contacts: 500 V/10 A
3 contacts: 400 V/6 A

–

Connector Integral
M12, 5-pin: 60 V/4 A
Integral 7/8" 16UN:
250 V/6 A

–

IP 66, IK 06

IP 66, IK 07

IP 65, IK 03

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 cable gland or
1/2" NPT

1 entry for ISO M20 or
Pg 13 cable gland

–

–

Integral M12
or 7/8" 16UN

–

XCK M

XCK L

XCK J

XCK S

5/68

5/68

5/84

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Limit switches

Osiswitch® Classic, Application and Miniature snap switches

Application: for installations requiring electrical redundancy	Application: for lifting and materials handling equipment or very severe applications	Sub-miniature, miniature: applications requiring high precision and a low operating force	Applications: safety (1)		
			Limit switches	Coded magnetic switches, pre-cabled or with connector on flying lead	Coded magnetic system
					
Metal	Metal or polyester	Plastic	Metal or plastic	Plastic	
2 sets of contacts	–	Depending on type			
Head + Body + Operator	Fixed composition	Depending on type, fixed composition or contact and operator	–		
–			EN 50041 or EN 50047	–	
72 x 81 x 36	Depending on type	DIN 41635, depending on type	Depending on type	16 x 51 x7 25 x 88 x 13 Ø 30, L 38.5	34 x 100 x 32
Linear movement (plunger) Rotary movement (lever)		Linear movement (plunger)	Linear movement (plunger) Rotary movement (lever) Actuator operated Spindle operated	–	
2 x N/C + N/O contact blocks	Depending on type	–	Depending on type: 2-pole, 3-pole or 4-pole contact blocks	Independent Reed type contacts operated by coded magnet. Must be used with a Preventa safety module. Depending on type: N/C + N/O (N/C staggered) N/O + N/O (1 N/O staggered) N/C + N/C + N/O (1 N/C staggered) N/C + N/O + N/O (1 N/O staggered) N/C + N/O (N/O staggered) N/O + N/O (1 N/O staggered)	Self-contained system not requiring use of safety module or non-magnetic slim 2 PNP type Solid-state outputs XCS DM4 : EDM function + 1 alarm output
–					
–	Depending on type	1 single-pole contact			
–	Depending on type	–			
2 x N/C + N/O break before make contact blocks	Depending on type	–			
–					
Screw terminal 2 contacts: 500 V/10 A		Depending on type			
–					
IP 66, IK 06	Depending on type: IP 66, IK 05, IP 65, IK 05 or IP 54, IK 05	Depending on type		Depending on type: IP 66 and IP 67 or IP 67	Pre-cabled: IP 66, IP 67 and IP 69K Connector: IP 67
3 entries for ISO M20 or Pg 13 cable gland	Depending on type: 1 or 3 entries for ISO M20 or Pg 13 cable gland	Depending on type: by tags or pre-wired	Depending on type: entry for cable gland or pre-cabled	Depending on type: pre-cabled or with connector on flying lead	Depending on type: pre-cabled or with M12 connector (A coding)
–					
XCK ML	XCR, XCK MR, XC1 AC, XC2 J	XEP	XCS ●	XCS DMC XCS DMP XCS DMR	XCS DM3 XCS DM4
5/68	5/122, 5/132 and 5/138	5/156	5/164	5/174 and 5/175	5/184

(1) For further information, please refer to our "Safety solutions using Preventa" catalogue.

Limit switches

Osiswitch®

Osiconcept®: Offering Simplicity through Innovation

Principle

Osiconcept principle: innovation through modularity

■ The Miniature design XCM D and Compact design XCK D, XCK P and XCK T product range family benefits from **Osiconcept**: Offering simplicity through innovation.

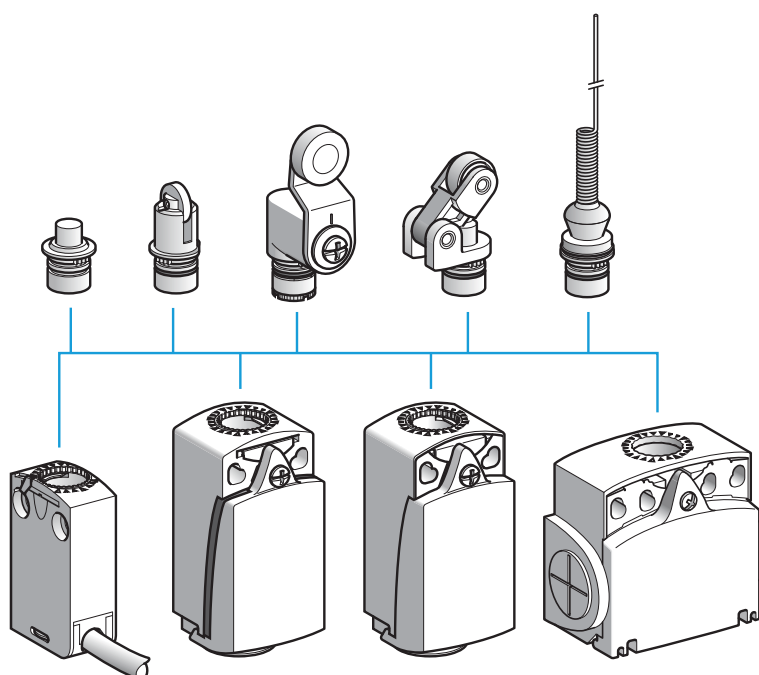
■ A worldwide detection first for improving productivity.

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

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

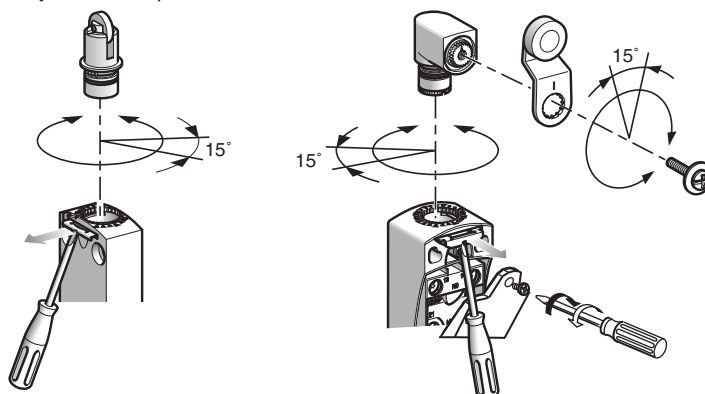
Heads

■ A single metal operating head type for the Miniature design XCM D and Compact design XCK D, XCK P and XCK T ranges.



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

■ Adjustable in 3 planes:



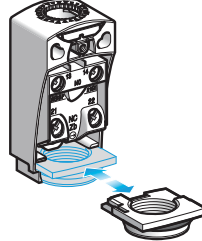
All the heads can be adjusted in 15° steps throughout 360°, in relation to the body.

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

Principle (continued)

Cable entries

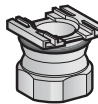
- The cable entries for Compact design XCK D and XCK P switches enable: simple cabling due to unrestricted access to contacts,



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



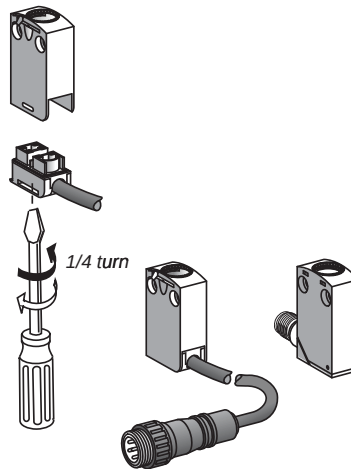
ISO M16 x 1.5
Pg 11



ISO M20 x 1.5
Pg 13
1/2" NPT
PF 1/2 (G 1/2)

Each model is available in metal or plastic, respectively suited for Compact design XCK D and XCK P.

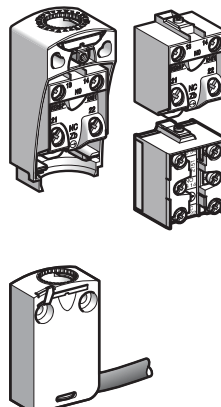
Connection components



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

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

Contact block or body with contacts



- 2 and 3 snap action and slow break contact blocks, with positive opening operation, are interchangeable between the Compact design XCK D and XCK P and Classic XCK J, XCK S, XCK M and XCK L ranges.

- For the Miniature design XCM D 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.

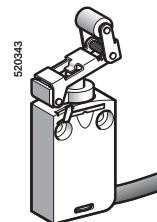
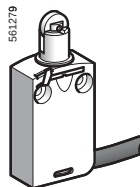
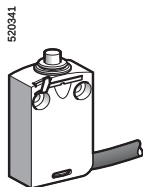
Limit switches

Osiswitch® Universal, Osiconcept®

Miniature design, metal, type XCM D

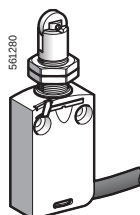
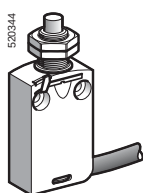
■ XCM D pre-cabled

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



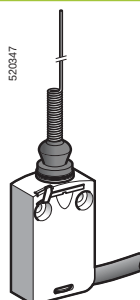
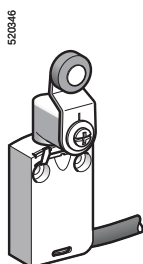
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□ With head for linear movement (plunger). Fixing by the head.



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

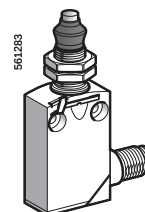
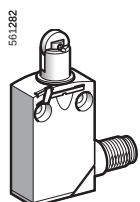
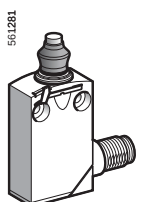


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■ XCM D with integral connector

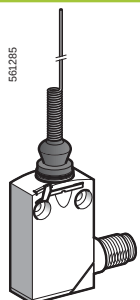
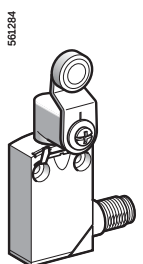
□ With head for linear movement (plunger)
Fixing by the body

Fixing by the head



Page 5/14

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



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Environment characteristics

Conforming 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		Operation: - 25...+ 70 °C. Storage: - 40...+ 70 °C
Vibration resistance		XCM D snap action: 5 gn. XCM D 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
Electric shock protection		Class I conforming to IEC 61-140 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 operating cycles 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

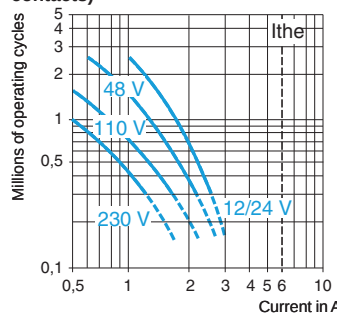
Rated operational characteristics	Switches with 2 contacts	~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A) --- DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	Switches with 3 and 4 contacts	~ AC-15; C300 (Ue = 240 V, Ie = 0.75 A) --- DC-13; R300 (Ue = 250 V, Ie = 0.1 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 4-pin M12 connector	Ui = 250 V, Ie = 3 A maximum, Ithe = 3 A
	Switches with 5-pin M12 connector	Ui = 60 V, Ie = 4 A maximum, Ithe = 4 A
	Switches with 5-pin 7/8" 16UN 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)		N/C 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
Electric shock protection		6 A cartridge fuse type gG (gl)
Minimum actuation speed		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

a.c. supply
~ 50/60 Hz
~ inductive circuit

XCM D snap action (N/C + N/O, N/C + N/C, N/C + N/C + N/O, N/C + N/C + N/O + N/O contacts)

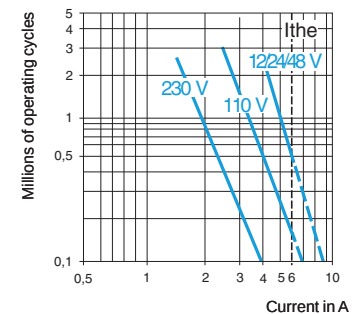


d.c. supply ---

Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
~	W	3	2	1

XCM D slow break (N/C + N/O, N/C + N/C + N/O contacts)



Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
~	W	4	3	3

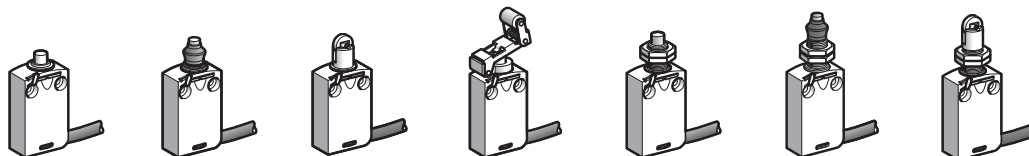
Limit switches

Osiswitch® Universal, Osiconcept®

Miniature design, metal, type XCM D

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	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger
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References

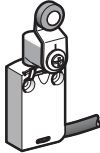
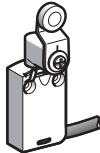
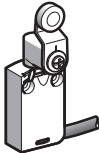
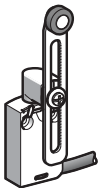
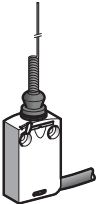
2-pole N/C + N/O snap action 	XCM D2110L1 	XCM D2111L1 	XCM D2102L1 	XCM D2124L1 	XCM D21F0L1 	XCM D21G1L1 	XCM D21F2L1
2-pole N/C + N/O break before make, slow break 	XCM D2510L1 	XCM D2511L1 	XCM D2502L1 	XCM D2524L1 	XCM D25F0L1 	XCM D25G1L1 	XCM D25F2L1
2-pole N/C + N/C snap action 	ZCM D29L1 + ZCE 10 	ZCM D29L1 + ZCE 11 	ZCM D29L1 + ZCE 02 	ZCM D29L1 + ZCE 24 	ZCM D29L1 + ZCE F0 	ZCM D29L1 + ZCE G1 	ZCM D29L1 + ZCE F2
3-pole N/C + N/C + N/O snap action 	ZCM D39L1 + ZCE 10 	ZCM D39L1 + ZCE 11 	ZCM D39L1 + ZCE 02 	ZCM D39L1 + ZCE 24 	ZCM D39L1 + ZCE F0 	ZCM D39L1 + ZCE G1 	ZCM D39L1 + ZCE F2
3-pole N/C + N/C + N/O break before make, slow break 	ZCM D37L1 + ZCE 10 	ZCM D37L1 + ZCE 11 	ZCM D37L1 + ZCE 02 	ZCM D37L1 + ZCE 24 	ZCM D37L1 + ZCE F0 	ZCM D37L1 + ZCE G1 	ZCM D37L1 + ZCE F2
Weight (kg)	0.180	0.180	0.185	0.200	0.195	0.220	0.205
4-pole N/C + N/C + N/O + N/O snap action 	ZCM D41L1 + ZCE 10 	ZCM D41L1 + ZCE 11 	ZCM D41L1 + ZCE 02 	ZCM D41L1 + ZCE 24 	ZCM D41L1 + ZCE F0 	ZCM D41L1 + ZCE G1 	ZCM D41L1 + ZCE F2
Weight (kg)	0.160	0.160	0.165	0.180	0.175	0.200	0.185
Contact operation				(A) = cam displacement (P) = positive opening point		→ N/C contact with positive opening operation	

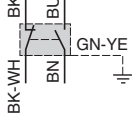
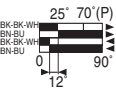
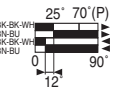
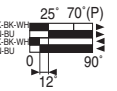
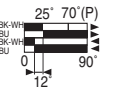
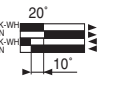
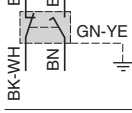
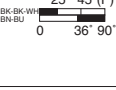
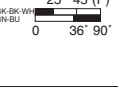
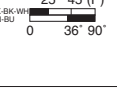
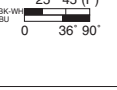
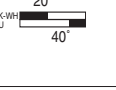
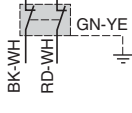
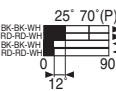
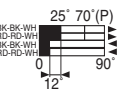
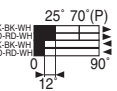
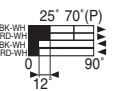
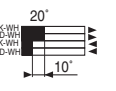
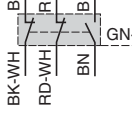
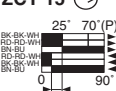
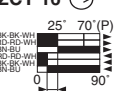
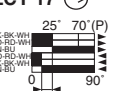
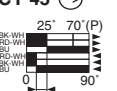
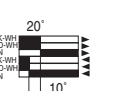
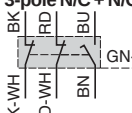
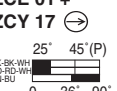
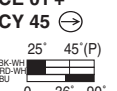
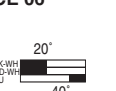
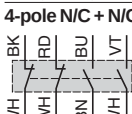
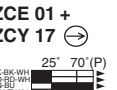
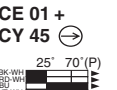
Characteristics

Switch actuation							
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	
	For positive opening	42.5 N	35 N	12.5 N	42.5 N	35 N	
Cabling		PvR cable; 5 x 0.75 mm ² , length 1 metre for 2-pole contact versions, 7 x 0.5 mm ² , length 1 metre for 3-pole contact versions, 9 x 0.34 mm ² , length 1 metre for 4-pole contact versions. For other cable lengths, see page 5/22.					

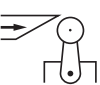
Limit switches

Osiswitch® Universal, Osiconcept®
Miniature design, metal, type XCM D
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 N/C + N/O snap action 	XCM D2115L1 	XCM D2116L1 	XCM D2117L1 	XCM D2145L1 	XCM D2106L1 
2-pole N/C + N/O break before make, slow break 	XCM D2515L1 	XCM D2516L1 	XCM D2517L1 	XCM D2545L1 	XCM D2506L1 
2-pole N/C + N/C snap action 	ZCM D29L1 + ZCE 01 + ZCY 15 	ZCM D29L1 + ZCE 01 + ZCY 16 	ZCM D29L1 + ZCE 01 + ZCY 17 	ZCM D29L1 + ZCE 01 + ZCY 45 	ZCM D29L1 + ZCE 06 
3-pole N/C + N/C + N/O snap action 	ZCM D39L1 + ZCE 01 + ZCY 15 	ZCM D39L1 + ZCE 01 + ZCY 16 	ZCM D39L1 + ZCE 01 + ZCY 17 	ZCM D39L1 + ZCE 01 + ZCY 45 	ZCM D39L1 + ZCE 06 
3-pole N/C + N/C + N/O break before make, slow break 	ZCM D37L1 + ZCE 01 + ZCY 15 	ZCM D37L1 + ZCE 01 + ZCY 16 	ZCM D37L1 + ZCE 01 + ZCY 17 	ZCM D37L1 + ZCE 01 + ZCY 45 	ZCM D37L1 + ZCE 06 
Weight (kg)	0.220	0.225	0.220	0.230	0.180
4-pole N/C + N/C + N/O + N/O snap action 	ZCM D41L1 + ZCE 01 + ZCY 15 	ZCM D41L1 + ZCE 01 + ZCY 16 	ZCM D41L1 + ZCE 01 + ZCY 17 	ZCM D41L1 + ZCE 01 + ZCY 45 	ZCM D41L1 + ZCE 06 
Weight (kg)	0.200	0.205	0.200	0.210	0.160
Contact operation	 contact closed  contact open (A) = cam displacement (P) = positive opening point  N/C contact with positive opening operation				

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

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 For positive opening	0.1 N.m 0.5 N.m —
Cabling	PvR cable; 5 x 0.75 mm ² , length 1 metre for 2-pole contact versions, 7 x 0.5 mm ² , length 1 metre for 3-pole contact versions, 9 x 0.34 mm ² , length 1 metre for 4-pole contact versions. For other cable lengths, see page 5/22.	

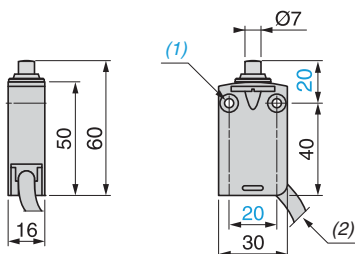
Limit switches

Osiswitch® Universal, Osiconcept®

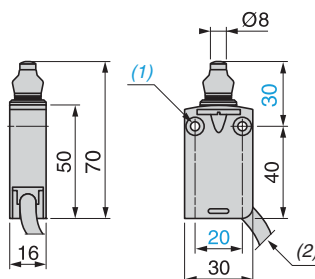
Miniature design, metal, type XCM D

Pre-cabled

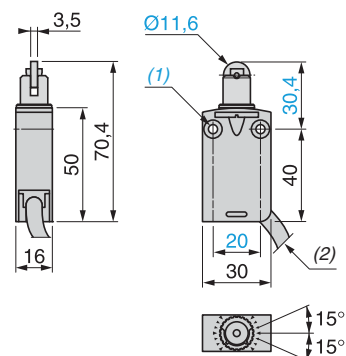
XCM D2•10L1



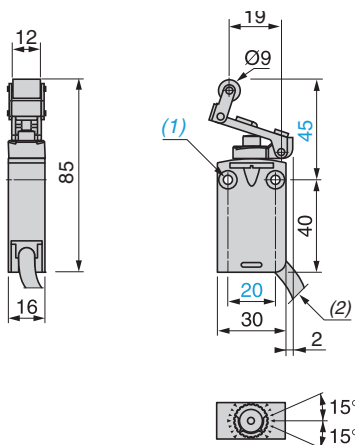
XCM D2•11L1



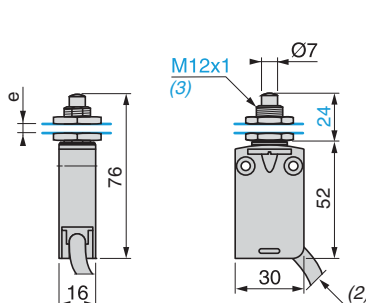
XCM D2•02L1



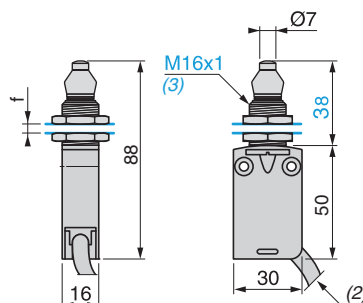
XCM D2•24L1



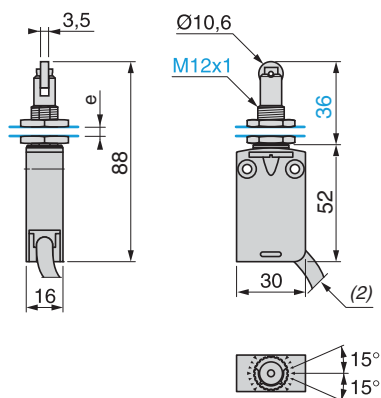
XCM D2•F0L1



XCM D2•G1L1



XCM D2•F2L1



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

(2) Overall 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.

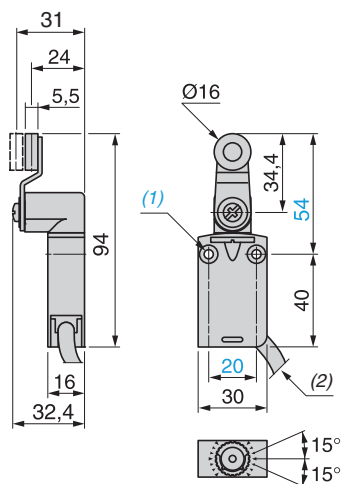
Limit switches

Osiswitch® Universal, Osiconcept®

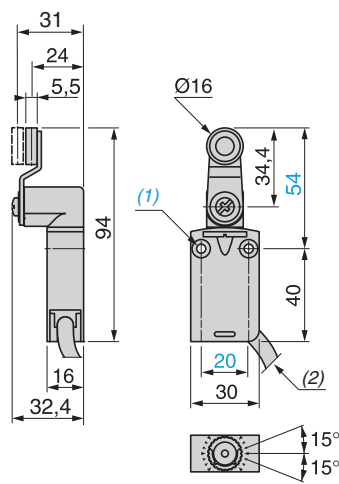
Miniature design, metal, type XCM D

Pre-cabled

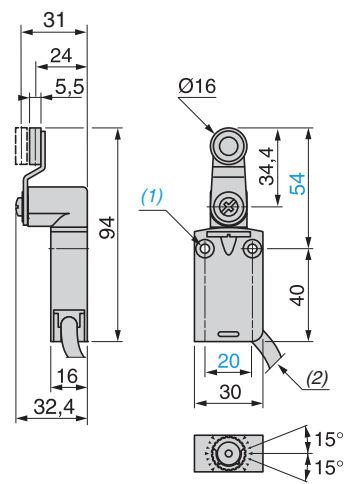
XCM D2•15L1



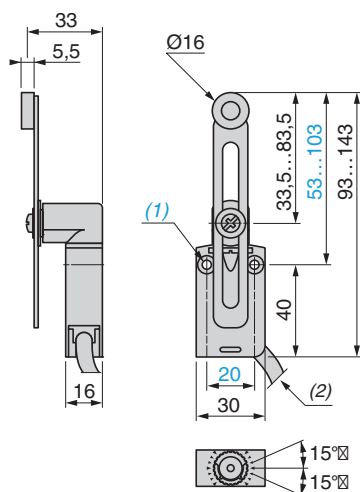
XCM D2•16L1



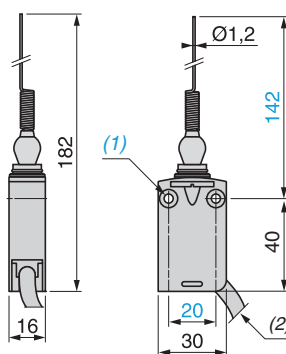
XCM D2•17L1



XCM D2•45L1



XCM D2•06L1



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

(2) Overall diameter of cable 7.5 mm.

e: 8 mm max, panel cut-out Ø 12.5 mm.

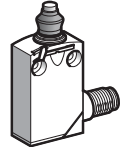
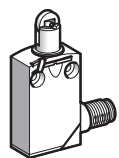
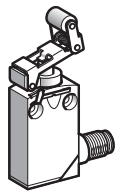
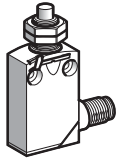
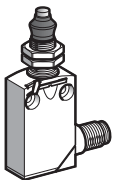
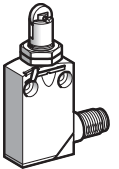
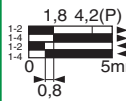
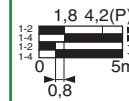
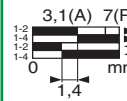
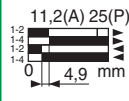
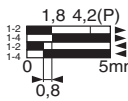
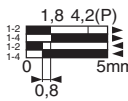
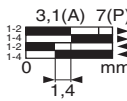
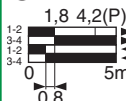
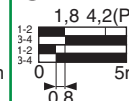
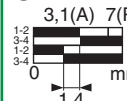
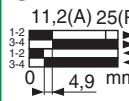
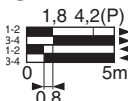
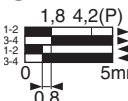
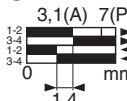
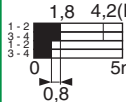
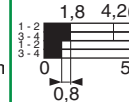
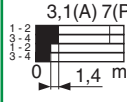
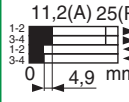
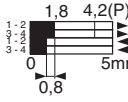
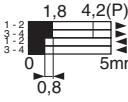
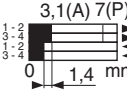
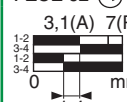
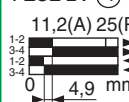
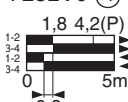
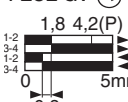
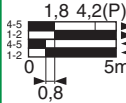
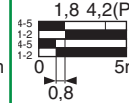
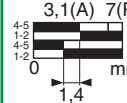
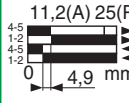
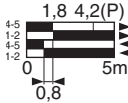
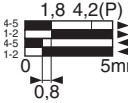
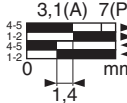
f: 8 mm max, panel cut-out Ø 16.5 mm.

Limit switches

Osiswitch® Universal, Osiconcept®

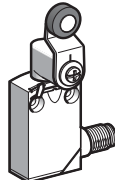
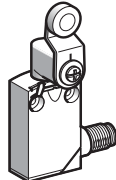
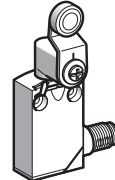
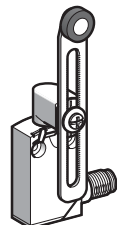
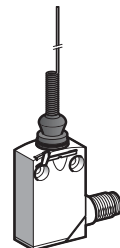
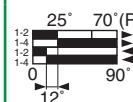
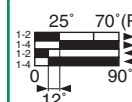
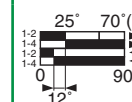
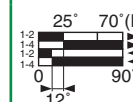
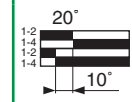
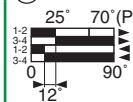
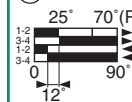
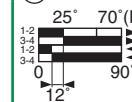
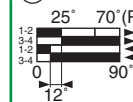
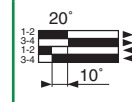
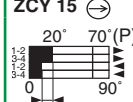
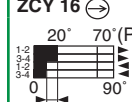
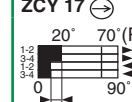
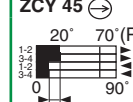
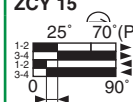
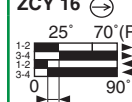
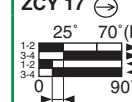
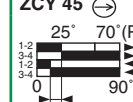
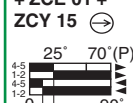
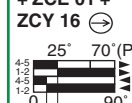
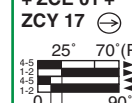
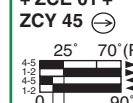
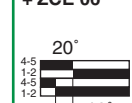
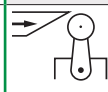
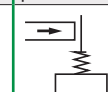
Miniature design, metal, type XCM D

Integral or remote 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	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger
References							
 Single-pole C/O snap action + integral M12 4-pin connector	XCM D2110M12	XCM D2111M12	XCM D2102M12	XCM D2124M12	XCM D21F0M12	XCM D21G1M12	XCM D21F2M12
							
 2-pole N/C + N/O snap action + integral M12 5-pin connector	XCM D2110C12	XCM D2111C12	XCM D2102C12	XCM D2124C12	XCM D21F0C12	XCM D21G1C12	XCM D21F2C12
							
 2-pole N/C + N/C snap action + integral M12 5-pin connector	ZCM D29C12 + ZCE 10	ZCM D29C12 + ZCE 11	ZCM D29C12 + ZCE 02	ZCM D29C12 + ZCE 24	ZCM D29C12 + ZCE F0	ZCM D29C12 + ZCE G1	ZCM D29C12 + ZCE F2
							
Weight (kg)	0.085	0.085	0.090	0.105	0.100	0.125	0.110
 2-pole N/C + N/O snap action + M12 5-pin connector on 0.8 m flying lead	ZCM D21L08R12 + ZCE 10	ZCM D21L08R12 + ZCE 11	ZCM D21L08R12 + ZCE 02	ZCM D21L08R12 + ZCE 24	ZCM D21L08R12 + ZCE F0	ZCM D21L08R12 + ZCE G1	ZCM D21L08R12 + ZCE F2
							
 2-pole N/C + N/O snap action + 7/8" 16UN 5-pin connector on 0.8 m flying lead	ZCM D21L08U78 + ZCE 10	ZCM D21L08U78 + ZCE 11	ZCM D21L08U78 + ZCE 02	ZCM D21L08U78 + ZCE 24	ZCM D21L08U78 + ZCE F0	ZCM D21L08U78 + ZCE G1	ZCM D21L08U78 + ZCE F2
							
Weight (kg)	0.150	0.150	0.155	0.170	0.165	0.190	0.175
Contact operation	 contact closed  contact open		(A) = cam displacement (P) = positive opening point		 N/C 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	
	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  because they are single-pole C/O.						

Limit switches

Osiswitch® Universal, Osiconcept®
Miniature design, metal, type XCM D
Integral or remote 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 C/O snap action With integral M12 4-pin connector	XCM D2115M12 	XCM D2116M12 	XCM D2117M12 	XCM D2145M12 	XCM D2106M12 
 2-pole N/C + N/O snap action With integral M12 5-pin connector	XCM D2115C12 	XCM D2116C12 	XCM D2117C12 	XCM D2145C12 	XCM D2106C12 
 2-pole N/C + N/C snap action With integral M12 5-pin connector	ZCM D29C12 + ZCE 01 + ZCY 15 	ZCM D29C12 + ZCE 01 + ZCY 16 	ZCM D29C12 + ZCE 01 + ZCY 17 	ZCM D29C12 + ZCE 01 + ZCY 45 	ZCM D29C12 + ZCE 06 
Weight (kg)	0.125	0.130	0.125	0.135	0.085
 2-pole N/C + N/O snap action With M12 5-pin connector on 0.8 m flying lead	ZCM D21L08R12 + ZCE 01 + ZCY 15 	ZCM D21L08R12 + ZCE 01 + ZCY 16 	ZCM D21L08R12 + ZCE 01 + ZCY 17 	ZCM D21L08R12 + ZCE 01 + ZCY 45 	ZCM D21L08R12 + ZCE 06 
 2-pole N/C + N/O snap action With 7/8" 16UN 5-pin connector on 0.8 m flying lead	ZCM D21L08U78 + ZCE 01 + ZCY 15 	ZCM D21L08U78 + ZCE 01 + ZCY 16 	ZCM D21L08U78 + ZCE 01 + ZCY 17 	ZCM D21L08U78 + ZCE 01 + ZCY 45 	ZCM D21L08U78 + ZCE 06 
Weight (kg)	0.200	0.205	0.200	0.210	0.160
Contact operation	contact closed contact open (A) = cam displacement (P) = positive opening point ⊕ N/C 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 C/O.				

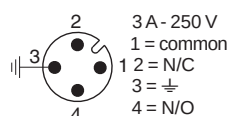
References of suitable pre-wired female connectors

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	XZ CP1169L2	XZ CP1164L2	XZ CP1264L2	XZ CP1771L2
	L = 5 m	XZ CP1169L5	XZ CP1164L5	XZ CP1264L5	XZ CP1771L5
	L = 10 m	XZ CP1169L10	XZ CP1164L10	XZ CP1264L10	XZ CP1771L10
Weight (kg)		0.105	0.115	0.115	0.190

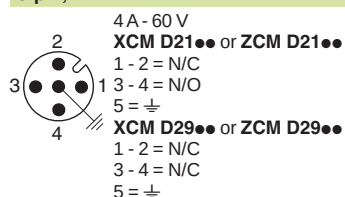
Connections

XCM D with connector

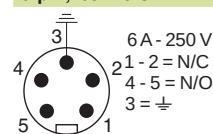
4-pin, M12



5-pin, M12

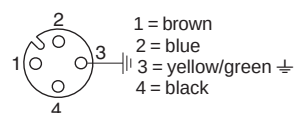


5-pin, 7/8" 16 UN

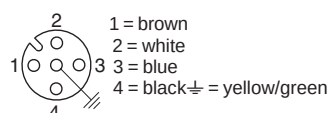


Pre-wired female connectors XZ CP

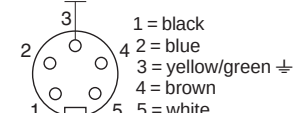
4-pin, M12



5-pin, M12

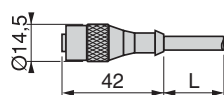


5-pin, 7/8" 16 UN

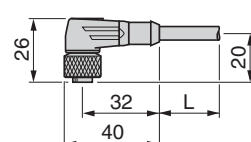


Dimensions

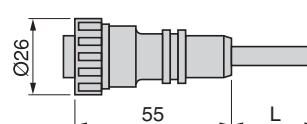
XZ CP116...L



XZ CP1264L



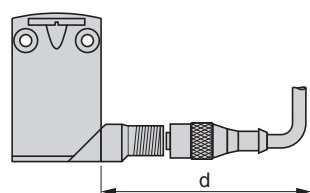
XZ CP1771L



L: cable length 2, 5 or 10 m.

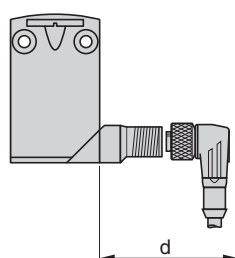
Distances required for plug-in connectors

M12 straight connector



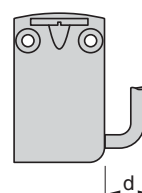
d: min. 65 mm, recommended 69 mm.

M12 elbowed connector



d: min. 42 mm, recommended 45 mm.

Connector on flying lead



d: min. 20 mm.

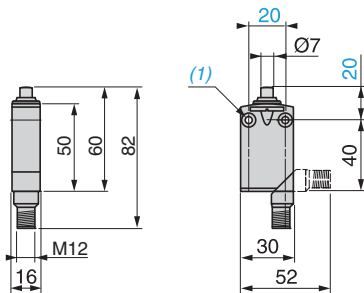
Limit switches

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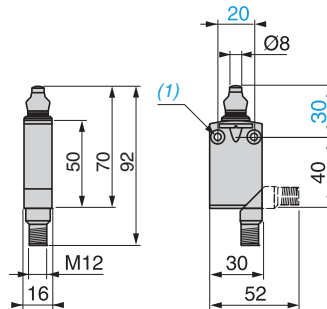
Miniature design, metal, type XCM D

Integral or remote connector

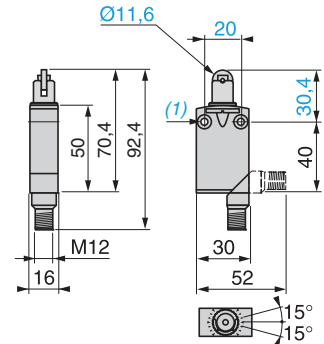
XCM D2•10M12



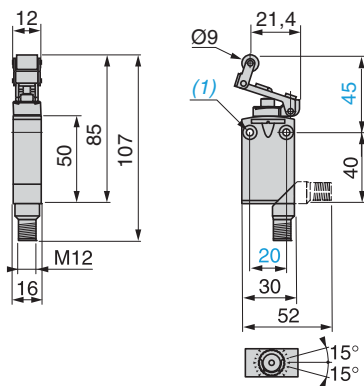
XCM D2•11M12



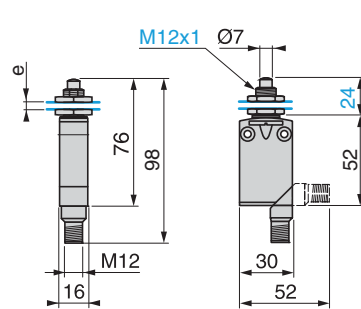
XCM D2•02M12



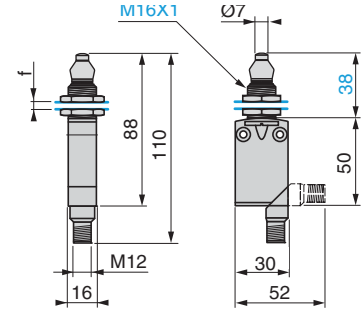
XCM D2•24M12



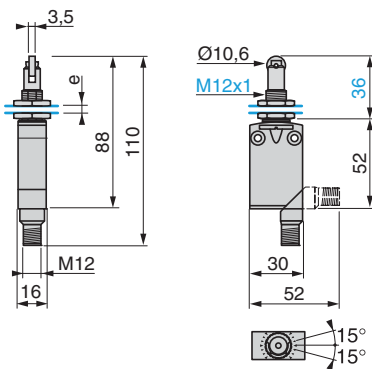
XCM D2•F0M12



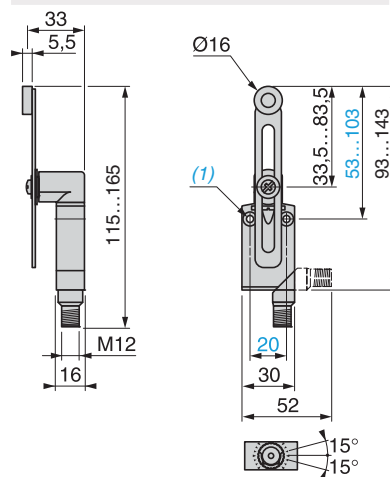
XCM D2•G1M12



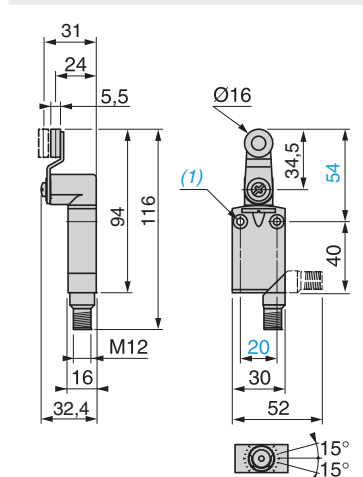
XCM D2•F2M12



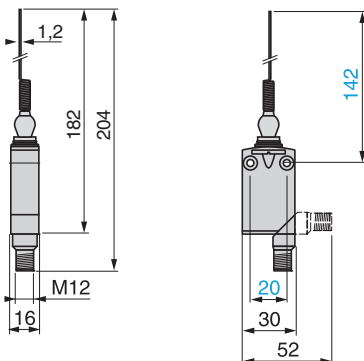
XCM D2•45M12



XCM D2•15M12 / •16M12 / •17M12



XCM D2•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.

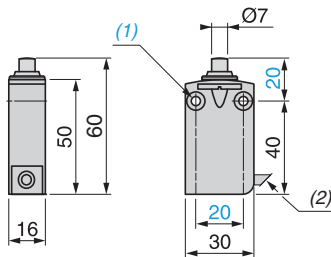
Limit switches

Osiswitch® Universal, Osiconcept®

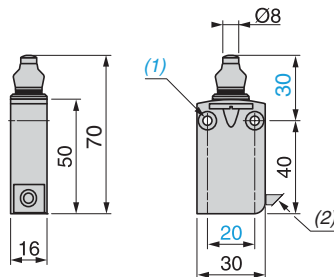
Miniature design, metal, type XCM D

Integral or remote connector

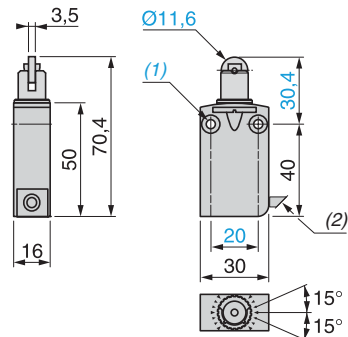
ZCM D21L08... + ZCE 10



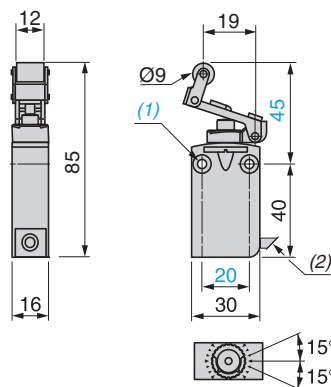
ZCM D21L08... + ZCE 11



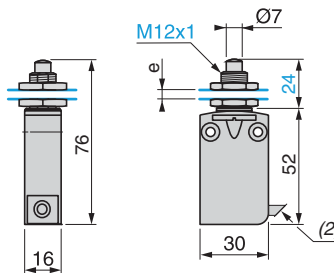
ZCM D21L08... + ZCE 02



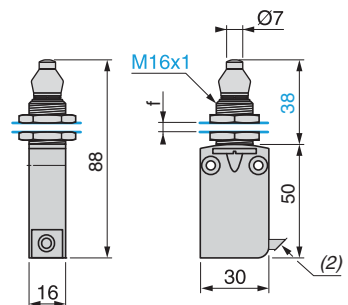
ZCM D21L08... + ZCE 24



ZCM D21L08... + ZCE F0



ZCM D21L08... + ZCE G1



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

(2) Overall 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.

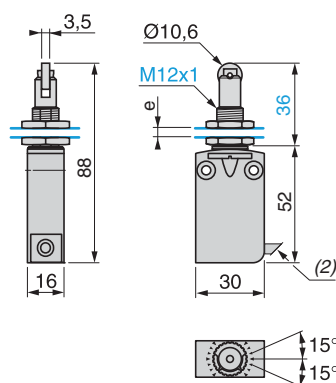
Limit switches

Osiswitch® Universal, Osiconcept®

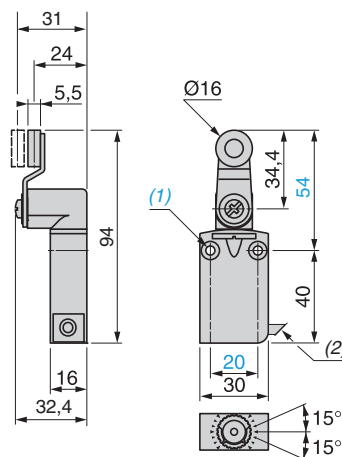
Miniature design, metal, type XCM D

Integral or remote connector

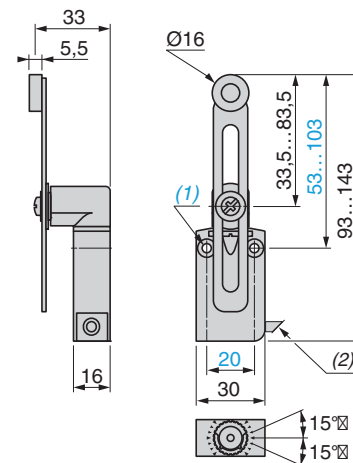
ZCM D21L08●●● + ZCE F2



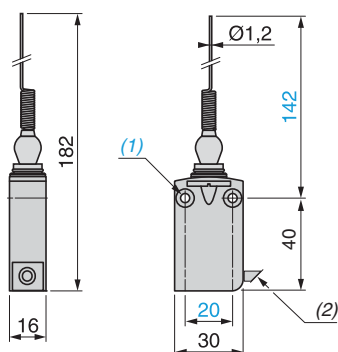
ZCM D21L08●●● + ZCE 01
+ ZCY 15/16/17



ZCM D21L08●●● + ZCE 01 + ZCY 45



ZCM D21L08●●● + ZCE 06



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

(2) Overall diameter 7.5 mm.

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

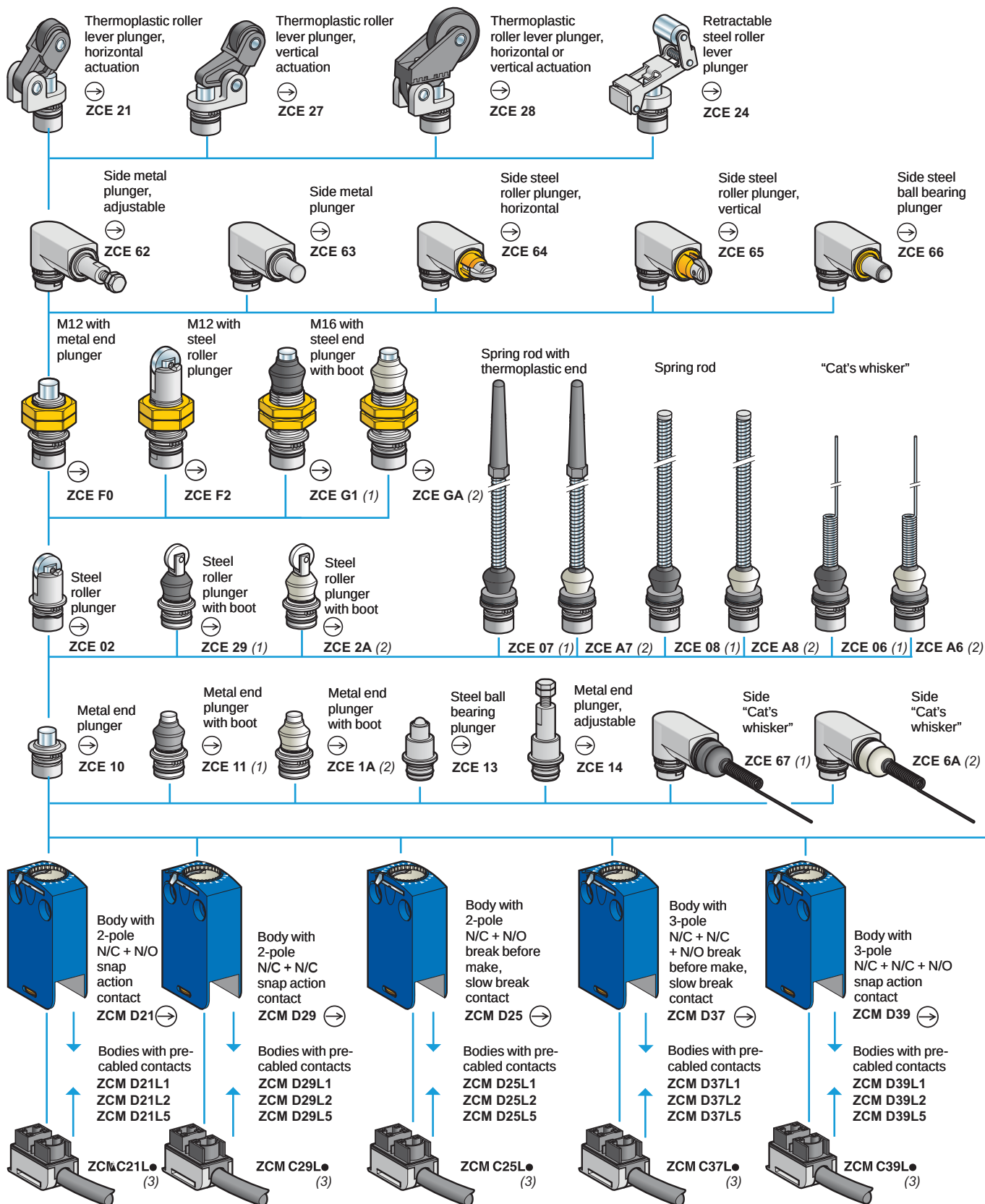
f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

Limit switches

Osiswitch® Universel, Osiconcept®

Miniature design, metal, type XCM D

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: ZCM C21L● becomes ZCM C21L7 for a 7 metre long cable.

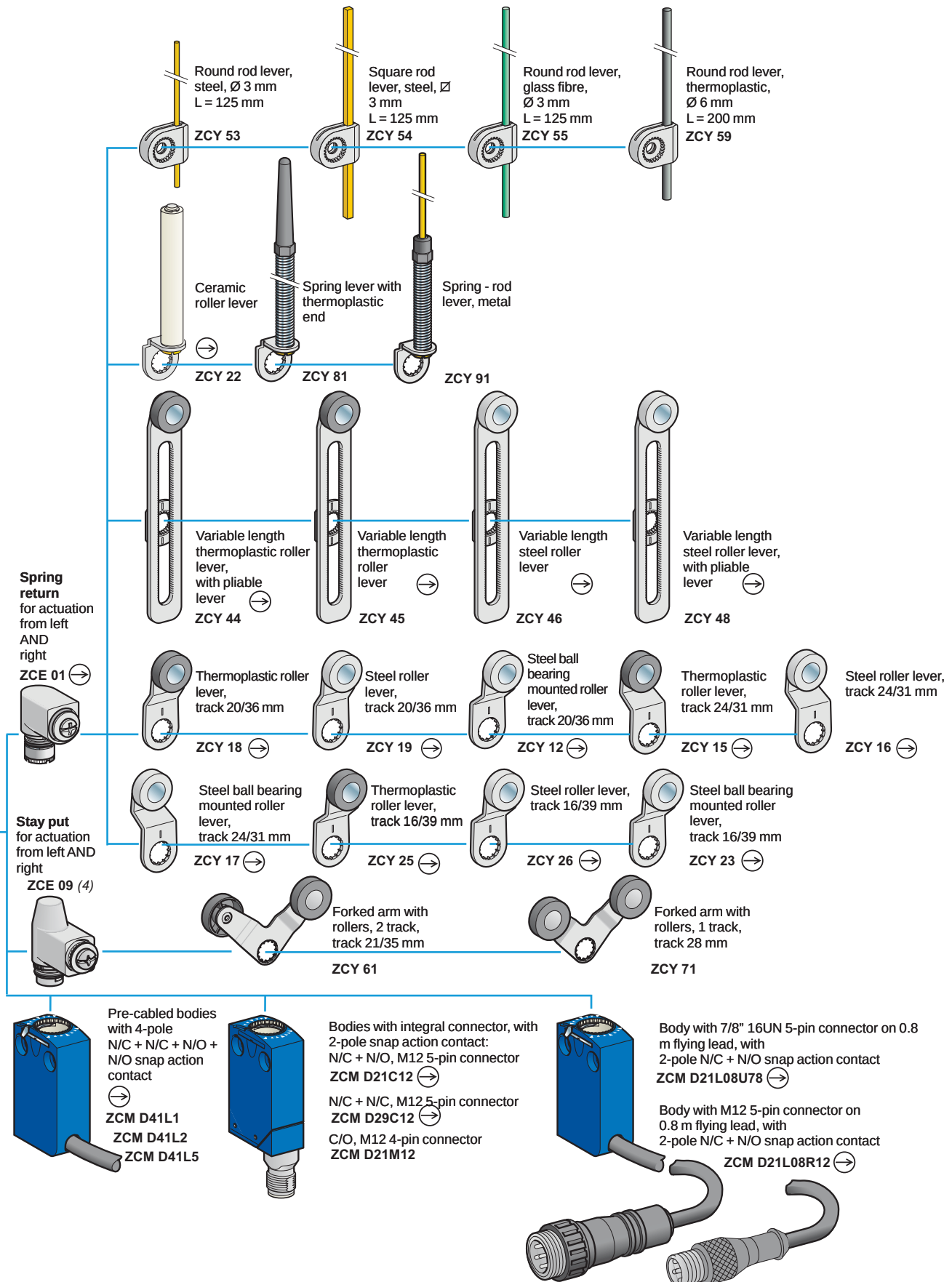
Note: only cable lengths of 1, 2 and 5 metres are available for pre-cabled connection components ZCM C37L● and ZCM C39L●.

Interrupteurs de position

Osiswitch® Universel, Osiconcept®

Design miniature, métallique, type XCM D

Composition variable



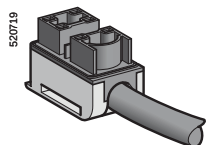
(4) Cannot be used on bodies ZCM D21, ZCM D29, ZCM D39, ZCM D41, ZCM D21C12, ZCM D21M12, ZCM D29C12, ZCM D21L08●●●.

Limit switches

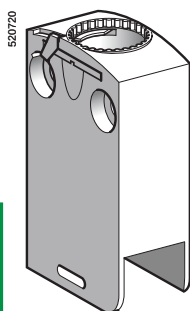
Osiswitch® Universal, Osiconcept®

Miniature design, metal, type XCM D

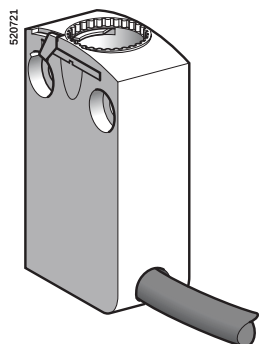
Separate components



ZCM C21E●



ZCM D6●
ZCM D7●



ZCM D81L●

Pre-cabled connection components (CEI cable) ⁽¹⁾

Type of contact	Scheme	Length of CEI cable in metres	Reference	Weight kg
2-pole				
N/C + N/O snap action		1	ZCM C21E1	0.100
		2	ZCM C21E2	0.190
		3	ZCM C21E3	0.280
		5	ZCM C21E5	0.440
		7	ZCM C21E7	0.700
		10	ZCM C21E10	0.970

Bodies with gold contacts

Type of contact	Positive operation ⁽²⁾	Scheme	Length of cable in metres	Reference	Weight kg
2-pole					
N/C + N/O snap action	⊙		—	ZCM D61	0.055
N/C + N/C snap action	⊙		—	ZCM D69	0.055
N/C + N/O break before make, slow break	⊙		—	ZCM D65	0.055
3-pole					
N/C + N/C + N/O snap action	⊙		—	ZCM D79	0.055
N/C + N/C + N/O break before make, slow break	⊙		—	ZCM D77	0.055
4-pole					
N/C + N/C + N/O + N/O snap action	⊙		1	ZCM D81L1	0.160
			2	ZCM D81L2	0.255
			5	ZCM D81L5	0.525

(1) Cable not UL, CSA certified.

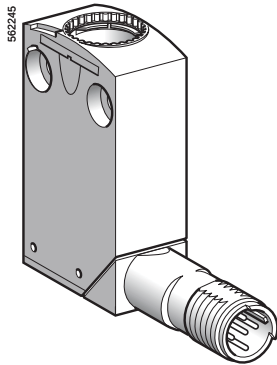
(2) ⊙ bodies with contacts assuring positive opening operation.

Limit switches

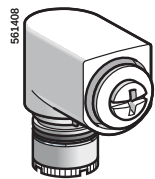
Osiswitch® Universal, Osiconcept®

Miniature design, metal, type XCM D

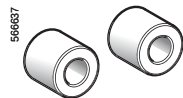
Separate components



ZCM D61●●●



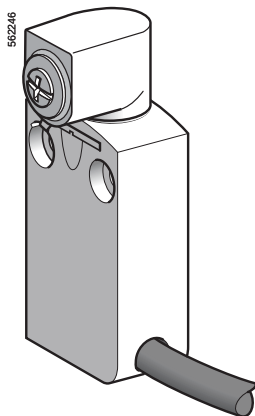
ZCE 05



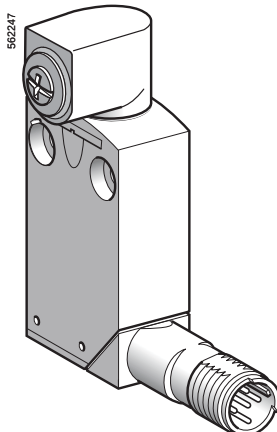
XCM Z06



XCM Z07



XCM D2●01L1



XCM D2101●12

Bodies with gold contacts, integral connector

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
2-pole					
N/C + N/O snap action	—		M12 5-pin	ZCM D61C12	0.065
N/C + N/C snap action	—		M12 5-pin	ZCM D69C12	0.065
Single-pole					
C/O snap action	—		M12 4-pin	ZCM D61M12	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)		ZCY 12, ZCY 15, ZCY 16, ZCY 17, ZCY 18, ZCY 19, ZCY 22, ZCY 23, ZCY 25, ZCY 26, ZCY 39, ZCY 53, ZCY 54, ZCY 55, ZCY 81	ZCE 05	0.045
Spacer for mounting multi-track XCM D	—	—	XCM Z06	0.005
Spacer for angular positioning of heads with adjustable levers, for values other than - 90°, 0° and 90°	—	—	XCM Z07	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					
N/C + N/O snap action			1	XCM D2101L1	0.180
N/C + N/O break before make, slow break			1	XCM D2501L1	0.180

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

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
2-pole					
N/C + N/O snap action			M12 5-pin	XCM D2101C12	0.110
Single-pole					
C/O snap action	—		M12 4-pin	XCM D2101M12	0.110

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

(2) For programming see page 5/192.

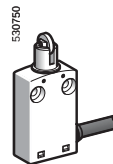
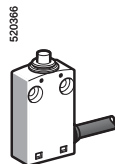
Limit switches

Osiswitch® Optimum

Miniature design, plastic, type XCM N

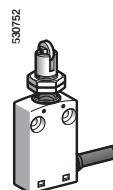
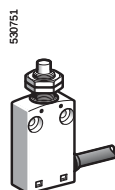
■ XCM N
pre-cabled

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



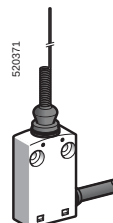
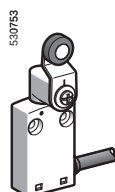
Page 5/26

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



Page 5/26

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



Page 5/26

Environment characteristics		
Conforming 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	Operation	- 25...+ 70 °C
	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 (gl)

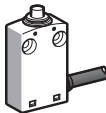
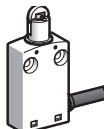
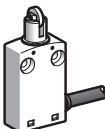
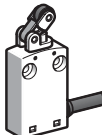
Limit switches

Osiswitch® Optimum

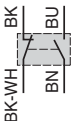
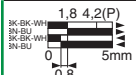
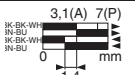
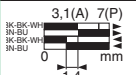
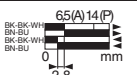
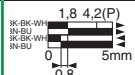
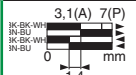
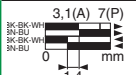
Miniature design, plastic, type XCM N

Pre-cabled

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

References

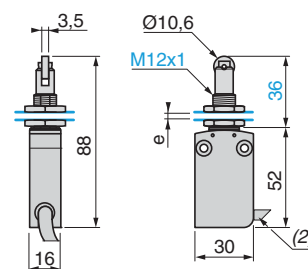
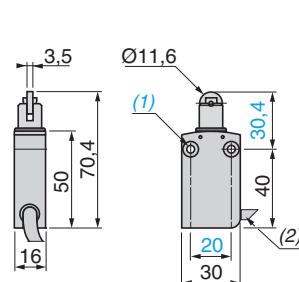
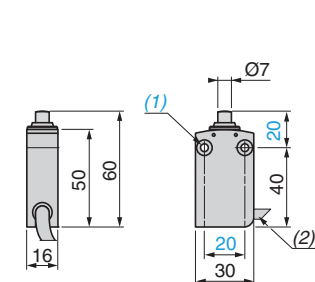
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Weight (kg)	0.080	0.080	0.080	0.090	0.065	0.095	0.095
Contact operation	 contact closed  contact open			(A) = cam displacement (P) = positive opening point		 N/C contact with positive opening operation	

Characteristics

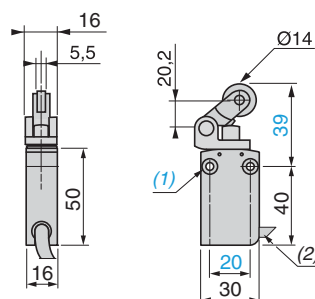
Switch actuation	On end	By 30° cam		On end	By 30° cam
Type of actuation					
Maximum actuation speed	0.5 m/s	0.1 m/s	0.5 m/s	0.5 m/s	0.1 m/s
Mechanical durability	5 millions operating cycles				
Minimum force or torque	For tripping	8.5 N	7 N	2.5 N	8.5 N
	For positive opening	42.5 N	35 N	12.5 N	42.5 N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

Dimensions

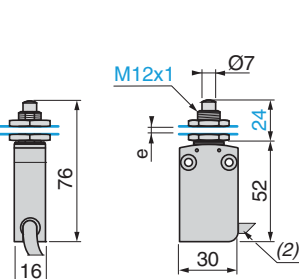
XCM N2110L1	XCM N2102L1, XCM N2103L1	XCM N21F2L1, XCM N21F3L1
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XCM N2121L1

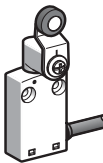
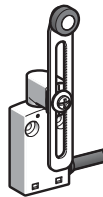
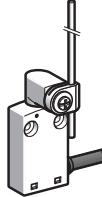
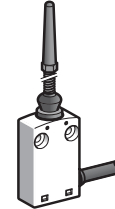


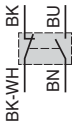
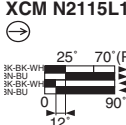
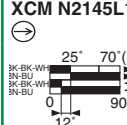
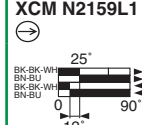
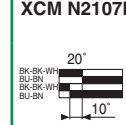
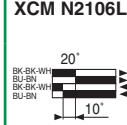
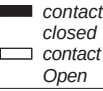
XCM N21F0L1



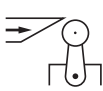
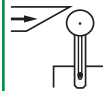
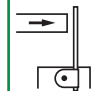
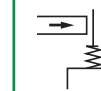
(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
(2) Overall diameter 7.5 mm.
e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.

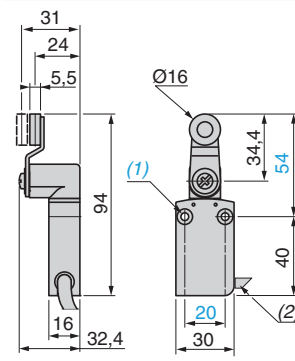
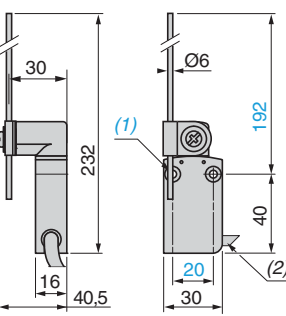
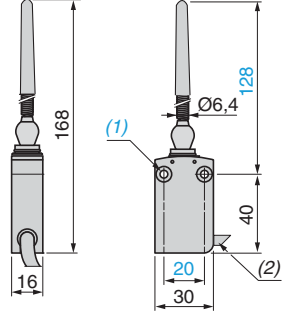
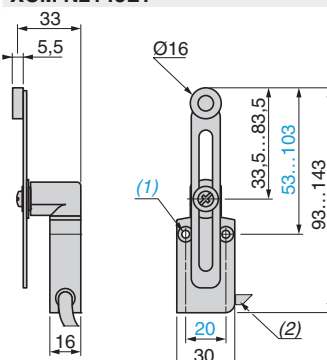
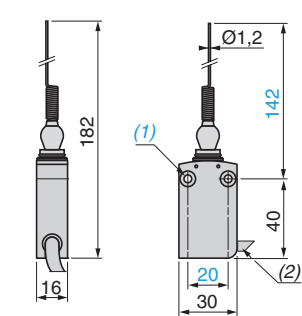
Limit switches
Osiswitch® Optimum
Miniature design, plastic, type XCM N
Pre-cabled

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					
	XCM N2115L1 	XCM N2145L1 	XCM N2159L1 	XCM N2107L1 	XCM N2106L1 
Weight (kg)	0.100	0.105	0.080	0.085	0.080
Contact operation	 (A) = cam displacement (P) = positive opening point ⊖ N/C contact with positive opening operation				

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

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 millions 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			
XCM N2115L1	XCM N2159L1		XCM N2107L1
			
XCM N2145L1	XCM N2106L1		
			

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

Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, plastic, types XCK P and XCK T

Compact design, metal, type XCK D

■ XCK P, XCK D

with 1 cable entry

Conforming to CENELEC EN 50047

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

XCK D

XCK P



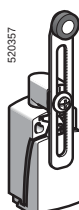
Pages 5/30 and 5/34

Pages 5/36 and 5/40

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

XCK D

XCK P



Pages 5/31 and 5/31

Pages 5/37 and 5/41

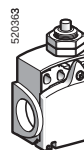
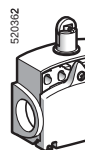
■ XCK T

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.

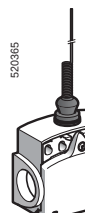
XCK T



Page 5/42

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

XCK T



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Environment characteristics

Conforming 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	Operation	- 25...+ 70 °C
	Storage	- 40...+ 70 °C
Vibration resistance	Conforming to IEC 60068-2-6	25 gn (10...500 Hz) except switch with head ZCE 24: 20 gn
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms) except heads ZCE 08 : 15 gn (11 ms) and ZCE 24 : 30 gn (18 ms)
Electric shock protection		Class II conforming to IEC 61140 and NF C 20-030 for XCK P and XCK T
		Class I conforming to IEC 61140 and NF C 20-030 for XCK D
Degree of protection		IP 66 and IP 67 conforming to IEC 60529; IK 04 conforming to EN 50102 for XCK P and XCK T, IK 06 conforming to EN 50102 for XCK D
Repeat accuracy		0.1 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry or integral 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, tapped PF 1/2 (G1/2) or integral M12 connector
Materials		XCK D: zamak bodies and heads, XCK P and XCK T: plastic bodies, zamak heads

Limit switches

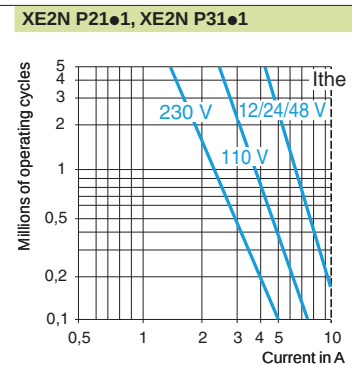
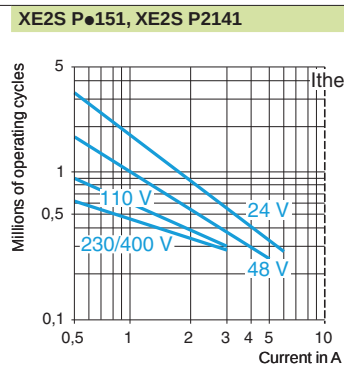
Osiswitch® Universal, Osiconcept®

Compact design, plastic, types XCK P and XCK T

Compact design, metal, type XCK D

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)		N/C contacts with positive opening operation conforming to IEC 60 947-5-1 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)
Cabling (screw clamp terminals)	XE2S P●151 and XE2S P2141	Clamping capacity, min: 1 x 0.34 mm², max: 2 x 1.5 mm²
	XE2N P21●1 and XE2N P31●1	Clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm²
	XE3N P and XE3S P	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)	XE2S P●151, XE2S P2141 and XE3S P:	0.01 m/minute
	XE2N P21●1, XE2N P31●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

a.c. supply
~ 50/60 Hz
~ inductive circuit



d.c. supply ---

Power broken in W for 5 million operating cycles.

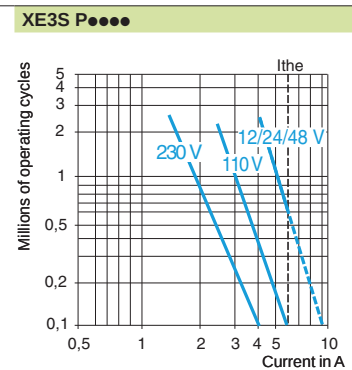
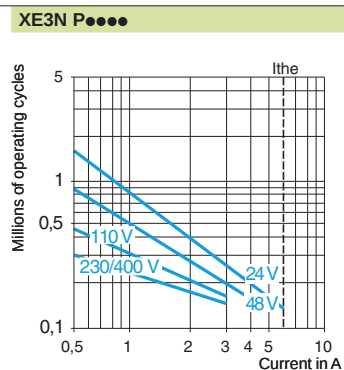
Voltage	V	24	48	120
~ in W	W	10	7	4

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
~ in W	W	13	9	7

For XE2S P●151 on ~ or ---, N/C and N/O contacts simultaneously loaded to the values shown with reverse polarity.

a.c. supply
~ 50/60 Hz
~ inductive circuit



d.c. supply ---

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
~ in W	W	3	2	1

Power broken in W for 5 million operating cycles.

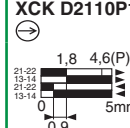
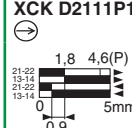
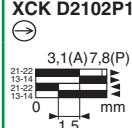
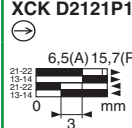
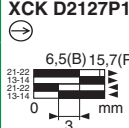
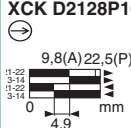
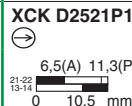
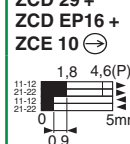
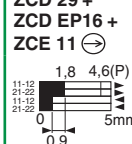
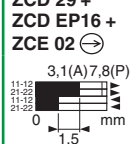
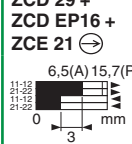
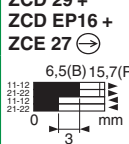
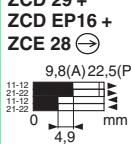
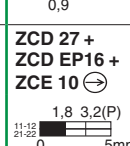
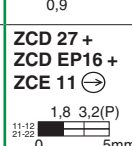
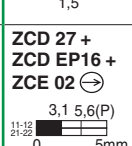
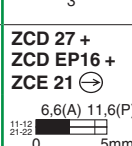
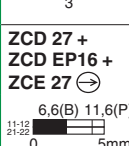
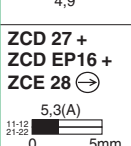
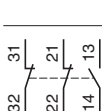
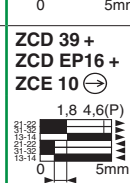
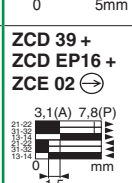
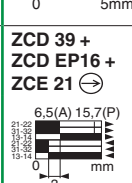
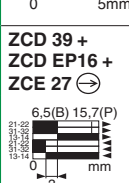
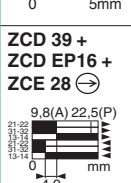
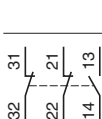
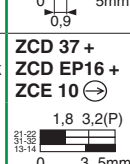
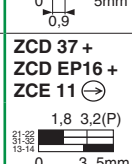
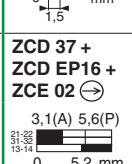
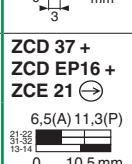
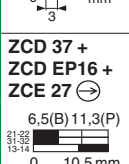
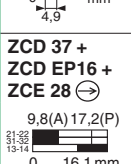
Voltage	V	24	48	120
~ in W	W	4	3	2

Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, metal, type XCK D

Complete units with 1 ISO M16 x 1.5 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 (2) (3)							
	2-pole N/C + N/O snap action (XE2S P2151)						
	2-pole N/C + N/O break before make, slow break (XE2N P2151)						
	2-pole N/C + N/C snap action (XE2S P2141)						
	2-pole N/C + N/C simultaneous, slow break (XE2N P2141)						
	3-pole N/C + N/C + N/O snap action (XE3S P2141)						
	3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)						
Weight (kg)		0.180	0.180	0.185	0.195	0.190	0.195
Contact operation		 contact closed  contact open		(A)(B) = cam displacement (P) = positive opening point		 N/C 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 5/198.

(2) Switches with gold contacts or ring type connections: please consult our Regional Sales Office.

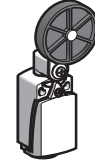
(3) For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Examples: XCK D2110P16 becomes XCK D2110G11, ZCD EP16 becomes ZCD EG11.

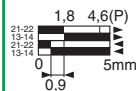
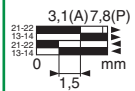
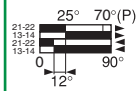
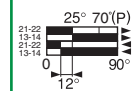
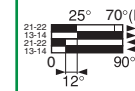
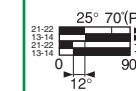
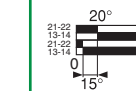
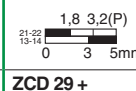
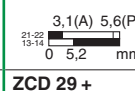
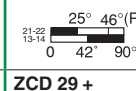
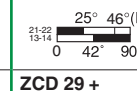
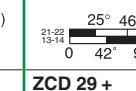
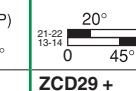
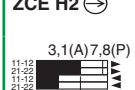
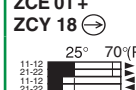
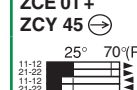
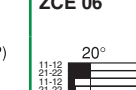
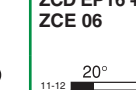
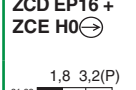
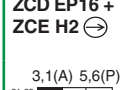
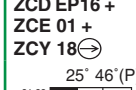
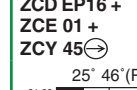
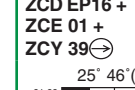
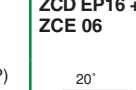
Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, metal, type XCK D

Complete units with 1 ISO M16 x 1.5 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" (4)

References (2) (3)							
	XCK D21H0P16	XCK D21H2P16	XCK D2118P16	XCK D2145P16	XCK D2139P16	XCK D2149P16	XCK D2106P16
							
	XCK D25H0P16	XCK D25H2P16	XCK D2518P16	XCK D2545P16	XCK D2539P16	XCK D2549P16	XCK D2506P16
							
	ZCD 29 + ZCD EP16 + ZCE H0	ZCD 29 + ZCD EP16 + ZCE H2	ZCD 29 + ZCD EP16 + ZCE 01 + ZCY 18	ZCD 29 + ZCD EP16 + ZCE 01 + ZCY 45	ZCD 29 + ZCD EP16 + ZCE 01 + ZCY 39	ZCD 29 + ZCD EP16 + ZCE 01 + ZCY 49	ZCD 29 + ZCD EP16 + ZCE 06
							
	ZCD 27 + ZCD EP16 + ZCE H0	ZCD 27 + ZCD EP16 + ZCE H2	ZCD 27 + ZCD EP16 + ZCE 01 + ZCY 18	ZCD 27 + ZCD EP16 + ZCE 01 + ZCY 45	ZCD 27 + ZCD EP16 + ZCE 01 + ZCY 39	ZCD 27 + ZCD EP16 + ZCE 01 + ZCY 49	ZCD 27 + ZCD EP16 + ZCE 06
							
	ZCD 39 + ZCD EP16 + ZCE H0	ZCD 39 + ZCD EP16 + ZCE H2	ZCD 39 + ZCD EP16 + ZCE 01 + ZCY 18	ZCD 39 + ZCD EP16 + ZCE 01 + ZCY 45	ZCD 39 + ZCD EP16 + ZCE 01 + ZCY 39	ZCD 39 + ZCD EP16 + ZCE 01 + ZCY 49	ZCD 39 + ZCD EP16 + ZCE 06
							
	ZCD 37 + ZCD EP16 + ZCE H0	ZCD 37 + ZCD EP16 + ZCE H2	ZCD 37 + ZCD EP16 + ZCE 01 + ZCY 18	ZCD 37 + ZCD EP16 + ZCE 01 + ZCY 45	ZCD 37 + ZCD EP16 + ZCE 01 + ZCY 39	ZCD 37 + ZCD EP16 + ZCE 01 + ZCY 49	ZCD 37 + ZCD EP16 + ZCE 06
							
Weight (kg)	0.220	0.220	0.225	0.235	0.235	0.245	0.175
Contact operation	 contact closed  contact open		(A) = cam displacement (P) = positive opening point		⊙ N/C 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	5 million op. cycles		
Minimum force or torque	For tripping For positive opening	15 N 45 N	10 N 36 N	0.1 N.m 0.25 N.m
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 5/198.

(2) Switches with gold contacts or ring type connections: please consult our Regional Sales Office.

(3) For an entry tapped for a n° 11 cable gland, replace P16 in the reference by **G11**. Examples: XCK D21H0P16 becomes **XCK D21H0G11**, ZCD EP16 becomes **ZCD EG11**.

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

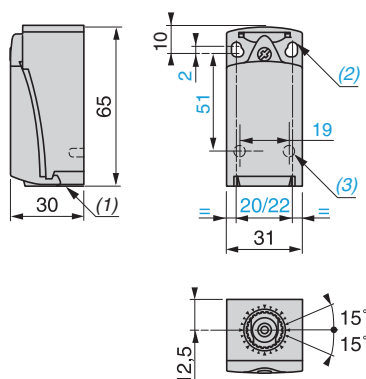
Limit switches

Osiswitch® Universal, Osiconcept®

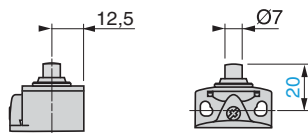
Compact design, metal, type XCK D

Complete units with 1 ISO M16 x 1.5 cable entry

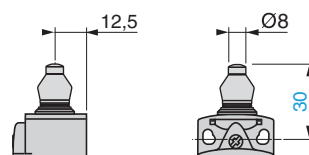
ZCD 2● + ZCD EP16 / ZCD 3● + ZCDE P16



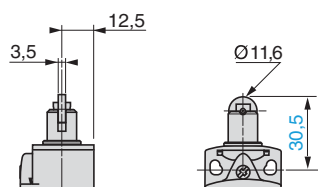
ZCE 10



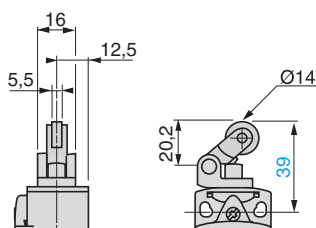
ZCE 11



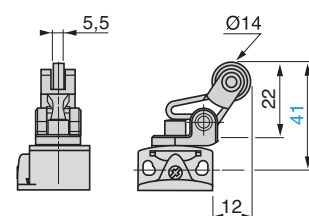
ZCE 02



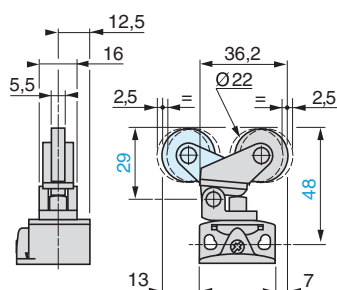
ZCE 21



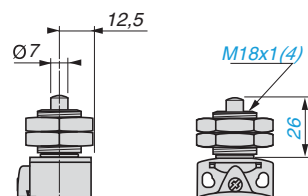
ZCE 27



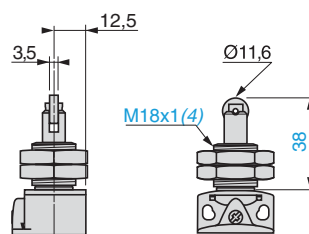
ZCE 28



ZCE H0



ZCE H2



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

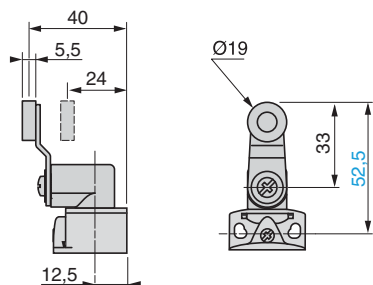
Limit switches

Osiswitch® Universal, Osiconcept®

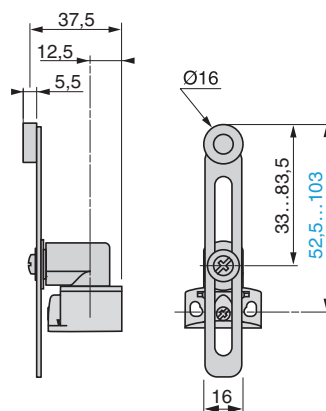
Compact design, metal, type XCK D

Complete units with 1 ISO M16 x 1.5 cable entry

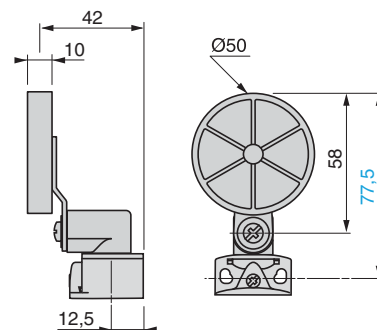
ZCE 01 + ZCY 18



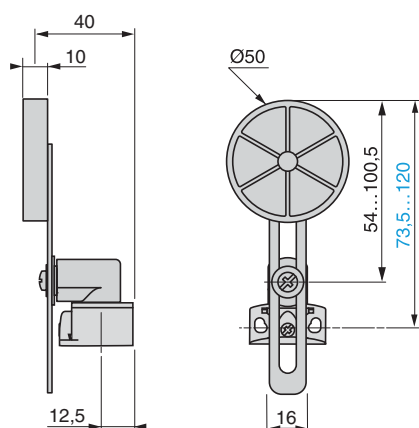
ZCE 01 + ZCY 45



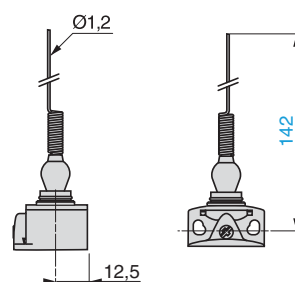
ZCE 01 + ZCY 39



ZCE 01 + ZCY 49



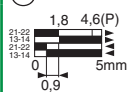
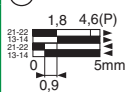
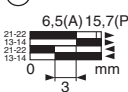
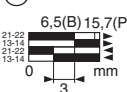
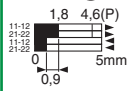
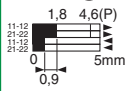
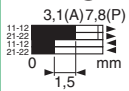
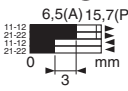
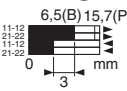
ZCE 06



Limit switches

Osiswitch® Universal, Osiconcept®
Compact design, metal, type XCK D
Integral 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		Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction

References						
2-pole N/C + N/O snap action (XE2S P2151)		XCK D2110M12 	XCK D2111M12 	XCK D2102M12 	XCK D2121M12 	XCK D2127M12 
2-pole N/C + N/C snap action (XE2S P2141)		ZCD 29M12 + ZCE 10 	ZCD 29M12 + ZCE 11 	ZCD 29M12 + ZCE 02 	ZCD 29M12 + ZCE 21 	ZCD 29M12 + ZCE 27 
Weight (kg)	0.190	0.190	0.195	0.205	0.200	0.205
Contact operation	 contact closed  contact open (A) (B) = cam displacement (P) = positive opening point (1) Form conforming to EN 50047, see page 5/198.					

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 5-pin connector. Ui = 60 V, Ie = 4 A maximum. Ith = 4 A					

Connections		
Integral M12 connector		
	XE2S P2151 1-2: N/C 3-4: N/O 5: ⚡	XE2S P2141 1-2: N/C 3-4: N/C 5: ⚡
See connection on page 9/44		

See complete drawing on page 3 of 4

Dimensions

ZCD 2•M12	ZCE 10	ZCE 11	ZCE 02	ZCE 21
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Technical drawing of ZCD 2•M12 showing side and front views with dimensions. Side view dimensions: total height 65, mounting flange height 77, mounting hole diameter M12, mounting flange width 30. Front view dimensions: total width 31, mounting hole diameter 20/22, mounting flange thickness 10, mounting hole offset 2, mounting hole diameter 51, mounting hole offset 19, mounting hole diameter 19, mounting hole offset 19, mounting hole diameter 19, mounting hole offset 19.

Technical drawing of ZCE 27 showing side and front views with dimensions. Side view dimensions: total height 12.5, mounting hole diameter 7, mounting flange thickness 20.

ZCE 27

Technical drawing of ZCE 11 showing side and front views with dimensions. Side view dimensions: total height 12.5, mounting hole diameter 8, mounting flange thickness 30.

ZCE 28

Technical drawing of ZCE 02 showing side and front views with dimensions. Side view dimensions: total height 12.5, mounting hole diameter 11.6, mounting flange thickness 30.5.

Technical drawing of ZCE 21 showing side and front views with dimensions. Side view dimensions: total height 16, mounting hole diameter 14, mounting flange thickness 39.

ZCE H0

Technical drawing of ZCD 2•M12 showing top view with dimensions. Dimensions: total width 12.5, mounting hole diameter 15, mounting hole offset 15.

Technical drawing of ZCE 27 showing side and front views with dimensions. Side view dimensions: total height 5.5, mounting hole diameter 14, mounting flange thickness 22, mounting flange width 12.

Technical drawing of ZCE 28 showing side and front views with dimensions. Side view dimensions: total height 12.5, mounting hole diameter 16, mounting flange thickness 6, mounting flange width 13, mounting hole diameter 29, mounting hole offset 2.5, mounting hole diameter 36.2, mounting hole offset 2.5, mounting hole diameter 22, mounting flange thickness 48, mounting flange width 7.

Technical drawing of ZCE H0 showing side and front views with dimensions. Side view dimensions: total height 12.5, mounting hole diameter 7, mounting flange thickness 26, mounting flange width 26, mounting hole diameter 18x1(3).

(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.

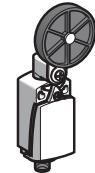
(3) Fixing nut thickness 3.5 mm.

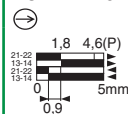
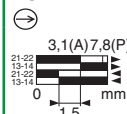
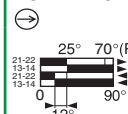
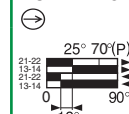
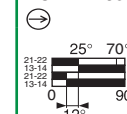
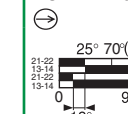
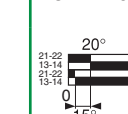
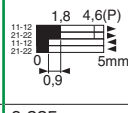
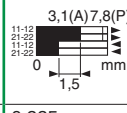
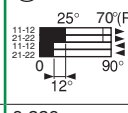
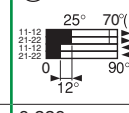
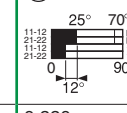
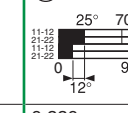
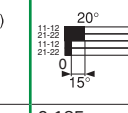
Limit switches

Osishwitch® Universal, Osiconcept®

Compact design, metal, type XCK D

Integral M12 connector

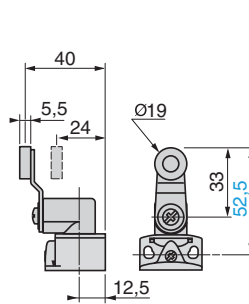
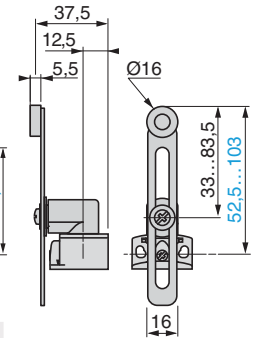
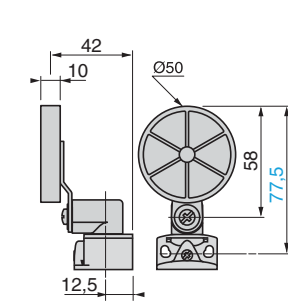
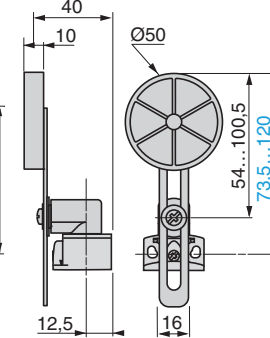
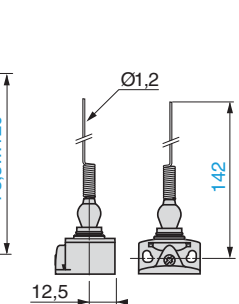
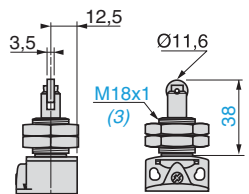
Type of head	Plunger (fixing by the head)		Rotary (fixing by the body)				Multi-directional
			Form A (1)				
							
Type of operator	M18 with metal end plunger	M18 with steel roller plunger	Thermoplastic roller lever	Variable length thermoplastic roller lever	Thermoplastic roller lever, Ø 50 mm	Variable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

References							
2-pole N/C + N/O snap action (XE2S P2151)	XCK D21H0M12 	XCK D21H2M12 	XCK D2118M12 	XCK D2145M12 	XCK D2139M12 	XCK D2149M12 	XCK D2106M12 
2-pole N/C + N/C snap action (XE2S P2141)	ZCD 29M12 + ZCE H0 	ZCD 29M12 + ZCE H2 	ZCD 29M12 + ZCE 01 + ZCY 18 	ZCD 29M12 + ZCE 01 + ZCY 45 	ZCD 29M12 + ZCE 01 + ZCY 39 	ZCD 29M12 + ZCE 01 + ZCY 49 	ZCD 29M12 + ZCE 06 
Weight (kg)	0.235	0.235	0.220	0.220	0.220	0.220	0.185
Contact operation	 contact closed  contact open (A) = cam displacement (P) = positive opening point						

(1) Form conforming to EN 50047, see page 5/198.

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

Characteristics				
Switch actuation	On end	By 30° cam		
Type of actuation				
Maximum actuation speed	0.5 m/s	1.5 m/s		
Mechanical durability (in millions of operating cycles)	10	5		
Minimum force or torque	For tripping For positive opening	15 N 45 N	10 N 36 N	0.1 N.m 0.25 N.m
Connection	M12 5-pin connector, U _i = 60 V, I _e = 4 A maximum, I _{th} = 4 A			

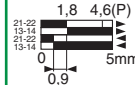
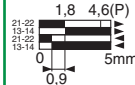
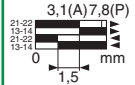
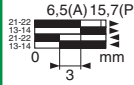
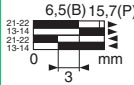
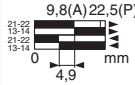
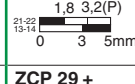
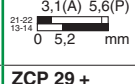
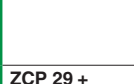
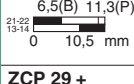
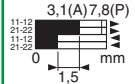
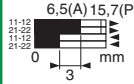
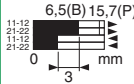
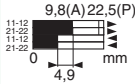
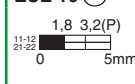
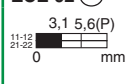
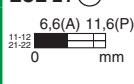
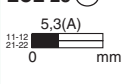
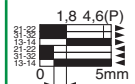
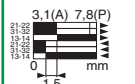
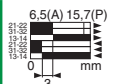
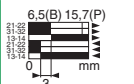
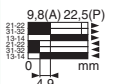
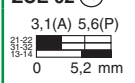
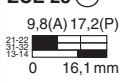
Dimensions				
ZCE 01 + ZCY 18	ZCE 01 + ZCY 45	ZCE 01 + ZCY 39	ZCE 01 + ZCY 49	ZCE 06
				
ZCE H2 	(3) Fixing nut thickness 3.5 mm.			

Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, plastic, type XCK P

Complete units with 1 ISO M16 x 1.5 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 (2) (3)						
 2-pole N/C + N/O snap action (XE2S P2151)	XCK P2110P16 	XCK P2111P16 	XCK P2102P16 	XCK P2121P16 	XCK P2127P16 	XCK P2128P16 
 2-pole N/C + N/O break before make, slow break (XE2N P2151)	XCK P2510P16 	XCK P2511P16 	XCK P2502P16 	XCK P2521P16 	XCK P2527P16 	XCK P2528P16 
 2-pole N/C + N/C snap action (XE2S P2141)	ZCP 29 + ZCP EP16 + ZCE 10 	ZCP 29 + ZCP EP16 + ZCE 11 	ZCP 29 + ZCP EP16 + ZCE 02 	ZCP 29 + ZCP EP16 + ZCE 21 	ZCP 29 + ZCP EP16 + ZCE 27 	ZCP 29 + ZCP EP16 + ZCE 28 
 2-pole N/C + N/C simultaneous, slow break (XE2N P2141)	ZCP 27 + ZCP EP16 + ZCE 10 	ZCP 27 + ZCP EP16 + ZCE 11 	ZCP 27 + ZCP EP16 + ZCE 02 	ZCP 27 + ZCP EP16 + ZCE 21 	ZCP 27 + ZCP EP16 + ZCE 27 	ZCP 27 + ZCP EP16 + ZCE 28 
 3-pole N/C + N/C + N/O snap action (XE3S P2141)	ZCP 39 + ZCP EP16 + ZCE 10 	ZCP 39 + ZCP EP16 + ZCE 11 	ZCP 39 + ZCP EP16 + ZCE 02 	ZCP 39 + ZCP EP16 + ZCE 21 	ZCP 39 + ZCP EP16 + ZCE 27 	ZCP 39 + ZCP EP16 + ZCE 28 
 3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)	ZCP 37 + ZCP EP16 + ZCE 10 	ZCP 37 + ZCP EP16 + ZCE 11 	ZCP 37 + ZCP EP16 + ZCE 02 	ZCP 37 + ZCP EP16 + ZCE 21 	ZCP 37 + ZCP EP16 + ZCE 27 	ZCP 37 + ZCP EP16 + ZCE 28 
Weight (kg)	0.090	0.090	0.095	0.105	0.100	0.105
Contact operation	 contact closed  contact open		(A)(B) = cam displacement (P) = positive opening point		 N/C 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	
Minimum force or torque	For tripping	15 N		12 N	
	For positive opening	45 N		36 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 5/198.

(2) Switches with gold contacts or ring type connections: please consult our Regional Sales Office.

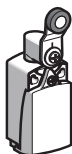
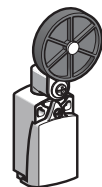
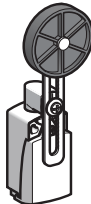
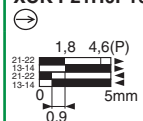
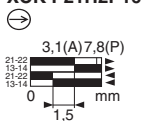
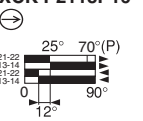
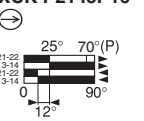
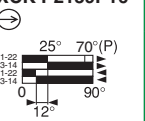
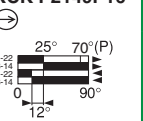
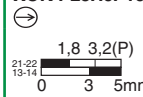
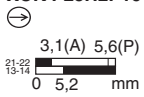
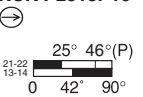
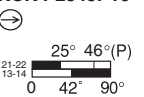
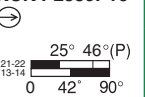
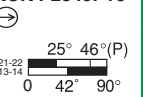
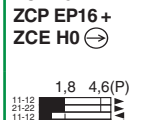
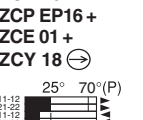
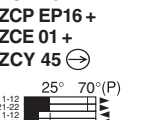
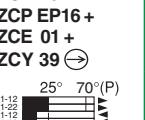
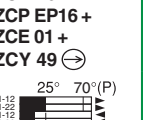
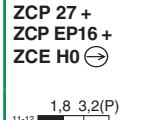
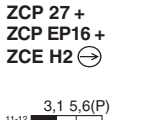
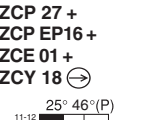
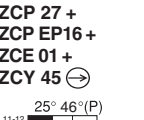
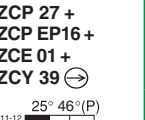
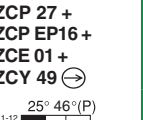
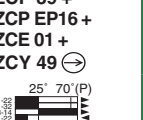
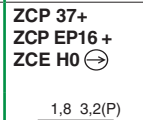
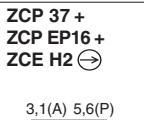
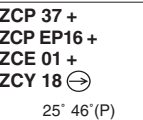
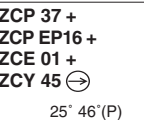
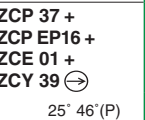
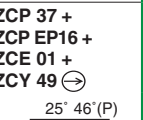
(3) For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Examples: XCK P2110P16 becomes XCK P2110G11, ZCP EP16 becomes ZCP EG11.

Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, plastic, type XCK P

Complete units with 1 ISO M16 x 1.5 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" (4)
References (2)							
	2-pole N/C + N/O snap action (XE2S P2151)	XCK P21H0P16 	XCK P21H2P16 	XCK P2118P16 	XCK P2145P16 	XCK P2139P16 	XCK P2149P16 
	2-pole N/C + N/O break before make, slow break (XE2N P2151)	XCK P25H0P16 	XCK P25H2P16 	XCK P2518P16 	XCK P2545P16 	XCK P2539P16 	XCK P2549P16 
	2-pole N/C + N/C snap action (XE2S P2141)	ZCP 29 + ZCP EP16 + ZCE H0 	ZCP 29 + ZCP EP16 + ZCE H2 	ZCP 29 + ZCP EP16 + ZCE 01 + ZCY 18 	ZCP 29 + ZCP EP16 + ZCE 01 + ZCY 45 	ZCP 29 + ZCP EP16 + ZCE 01 + ZCY 39 	ZCP 29 + ZCP EP16 + ZCE 06 
	2-pole N/C + N/C simultaneous, slow break (XE2N P2141)	ZCP 27 + ZCP EP16 + ZCE H0 	ZCP 27 + ZCP EP16 + ZCE H2 	ZCP 27 + ZCP EP16 + ZCE 01 + ZCY 18 	ZCP 27 + ZCP EP16 + ZCE 01 + ZCY 45 	ZCP 27 + ZCP EP16 + ZCE 01 + ZCY 39 	ZCP 27 + ZCP EP16 + ZCE 06 
	3-pole N/C + N/C + N/O snap action (XE3S P2141)	ZCP 39 + ZCP EP16 + ZCE H0 	ZCP 39 + ZCP EP16 + ZCE H2 	ZCP 39 + ZCP EP16 + ZCE 01 + ZCY 18 	ZCP 39 + ZCP EP16 + ZCE 01 + ZCY 45 	ZCP 39 + ZCP EP16 + ZCE 01 + ZCY 39 	ZCP 39 + ZCP EP16 + ZCE 06 
	3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)	ZCP 37 + ZCP EP16 + ZCE H0 	ZCP 37 + ZCP EP16 + ZCE H2 	ZCP 37 + ZCP EP16 + ZCE 01 + ZCY 18 	ZCP 37 + ZCP EP16 + ZCE 01 + ZCY 45 	ZCP 37 + ZCP EP16 + ZCE 01 + ZCY 39 	ZCP 37 + ZCP EP16 + ZCE 06 
Weight (kg)	0.130	0.130	0.135	0.145	0.145	0.155	0.085
Contact operation	 contact closed  contact open		(A) = cam displacement (P) = positive opening point		 N/C 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 op. cycles	
Minimum force or torque	For tripping For positive opening	15 N 45 N	10 N 36 N	0.1 N.m 0.25 N.m	0.13 N.m —		
Cable entry (3)	1 entrv tapped M16 x 1.5 mm for ISO cable gland, clamping capacity 4 to 8 mm						

(1) Form conforming to EN 50047, see page 5/198.

(2) Switches with gold contacts or ring type connections: please consult our Regional Sales Office.

(3) For an entry tapped for a n° 11 cable gland, replace P16 in the ref. by G11. Examples: XCK P21H0P16 becomes XCK P21H0G11, ZCP EP16 becomes ZCP EG11.

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

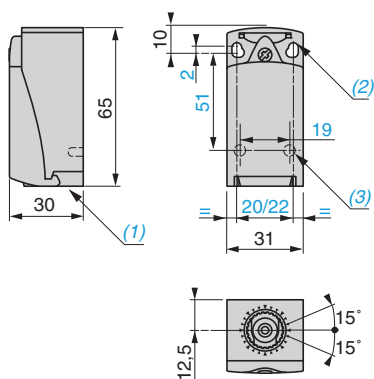
Limit switches

Osiswitch® Universal, Osiconcept®

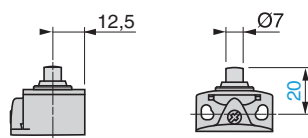
Compact design, plastic, type XCK P

Complete units with 1 ISO M16 x 1.5 cable entry

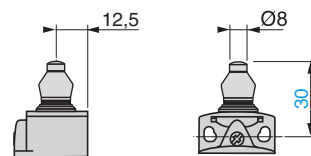
ZCP 2● + ZCP EP16 / ZCP 3● + ZCP EP16



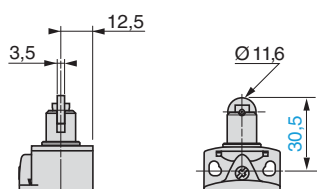
ZCE 10



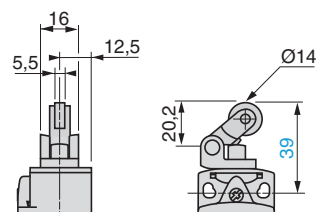
ZCE 11



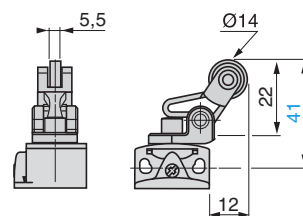
ZCE 02



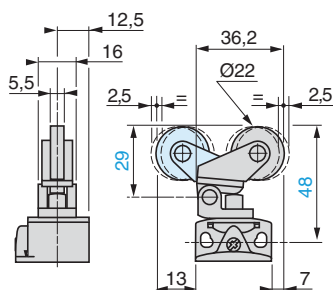
ZCE 21



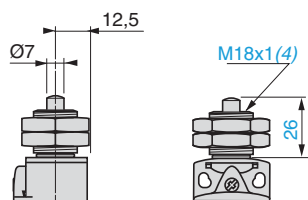
ZCE 27



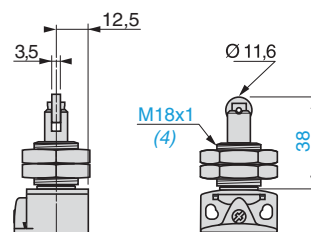
ZCE 28



ZCE H0



ZCE H2



- (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.

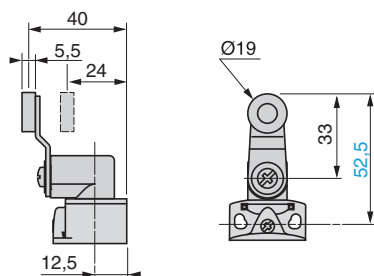
Limit switches

Osiswitch® Universal, Osiconcept®

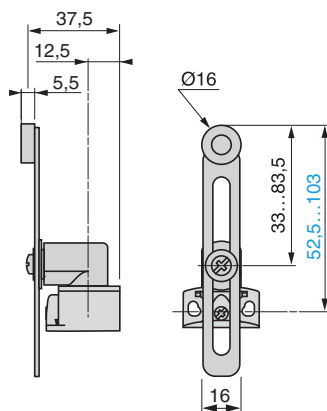
Compact design, plastic, type XCK P

Complete units with 1 ISO M16 x 1.5 cable entry

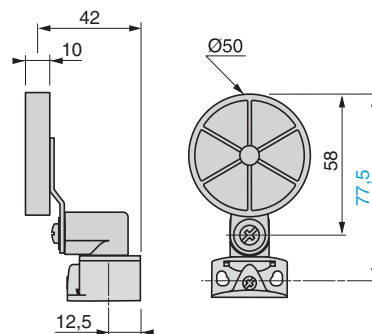
ZCE 01 + ZCY 18



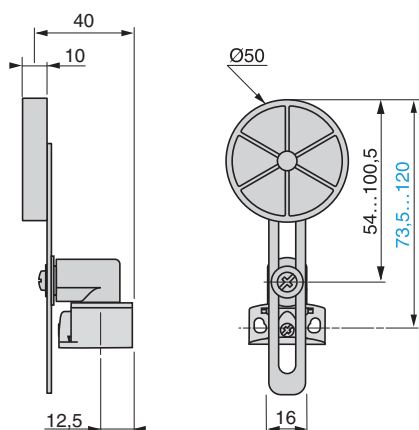
ZCE 01 + ZCY 45



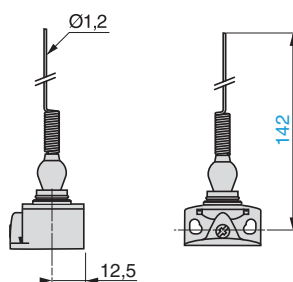
ZCE 01 + ZCY 39



ZCE 01 + ZCY 49



ZCE 06



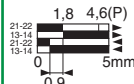
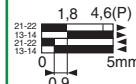
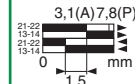
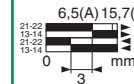
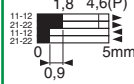
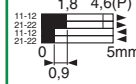
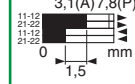
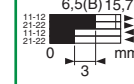
Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, plastic, type XCK P

Integral 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	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 N/C + N/O snap action (XE2S P2151)		XCK P2110M12 	XCK P2111M12 	XCK P2102M12 	XCK P2121M12 	XCK P2127M12 
2-pole N/C + N/C snap action (XE2S P2141)		ZCP 29M12 + ZCE 10 	ZCP 29M12 + ZCE 11 	ZCP 29M12 + ZCE 02 	ZCP 29M12 + ZCE 21 	ZCP 29M12 + ZCE 28 
Weight (kg)		0.100	0.100	0.100	0.110	0.110
Contact operation		 contact closed  contact open		(A)(B) = cam displacement (P) = positive opening point		⊕ N/C contact with positive opening operation

(1) Form conforming to EN 50047, see page 5/198.

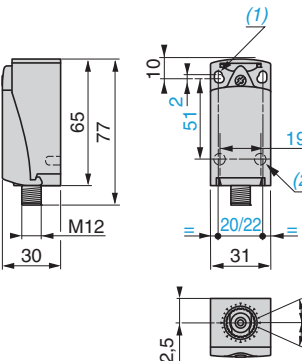
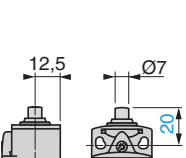
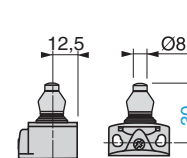
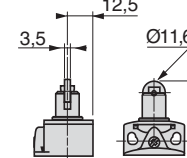
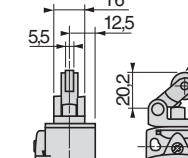
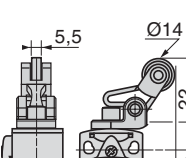
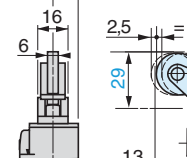
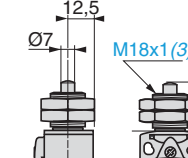
Characteristics						
Switch actuation	On end	By 30° cam				
Type of actuation						
Maximum actuation speed	0.5 m/s			1 m/s		
Mechanical durability (in millions of operating cycles)	15		10	15		
Minimum force or torque	For tripping	15 N	12 N	6 N		
	For positive opening	45 N	36 N	18 N		
Connection	M12 4-pin connector, Ui = 250 V, Ie = 3 A maximum, Ith = 3 A					

Connections

Integral M12 connector		
	XE2S P2151 1-2: N/C 3-4: N/O	XE2S P2141 1-2: N/C 3-4: N/C

See connection page 9/44

Dimensions

ZCP 2•M12	ZCE 10	ZCE 11	ZCE 02	ZCE 21
				
				

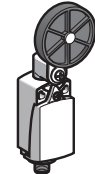
(1) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm ctrs.
 (2) 2 x Ø 3 mm holes for support studs, depth 4 mm.
 (3) Fixing nut thickness 3.5 mm.

Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, plastic, type XCK P

Integral 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)

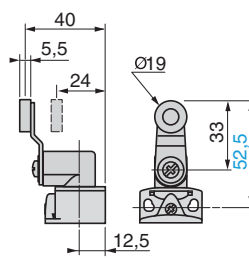
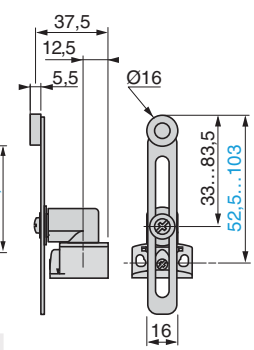
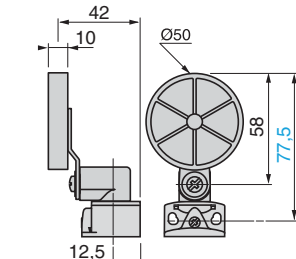
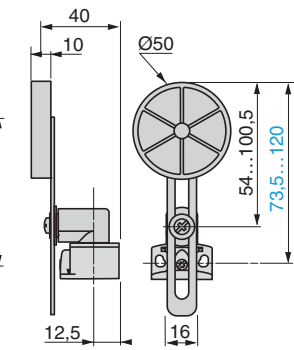
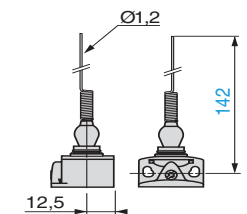
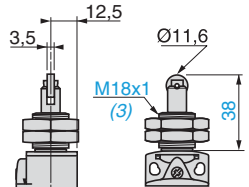
References							
2-pole N/C + N/O snap action (XE2S P2151)		XCK P21H0M12 1.8 4,6(P) 0,9 5mm	XCK P21H2M12 3,1(A)7,8(P) 0 1,5 mm	XCK P2118M126 25° 70°(P) 0 12° 90°	XCK P2145M12 25° 70°(P) 0 12° 90°	XCK P2139M12 25° 70°(P) 0 12° 90°	XCK P2149M12 25° 70°(P) 0 12° 90°
2-pole N/C + N/C snap action (XE2S P2141)		ZCP 29M12 + ZCE H0 1.8 4,6(P) 0 5mm	ZCP 29M12 + ZCE H2 3,1(A)7,8(P) 0 1,5 mm	ZCP 29M12 + ZCE 01 + ZCY 18 25° 70°(P) 0 12° 90°	ZCP 29M12 + ZCE 01 + ZCY 45 25° 70°(P) 0 12° 90°	ZCP 29M12 + ZCE 01 + ZCY 39 25° 70°(P) 0 12° 90°	ZCP 29M12 + ZCE 01 + ZCY 49 25° 70°(P) 0 12° 90°
Weight (kg)		0.140	0.140	0.140	0.150	0.155	0.160
Contact operation		■ contact closed □ contact open		(A) = cam displacement (P) = positive opening point		⊖ N/C contact with positive opening operation	

(1) Form conforming to EN 50047, see page 5/198.

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

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 For positive opening	15 N 45 N	10 N 36 N	0.1 N.m 0.25 N.m
Connection	M12 4-pin connector, Ui = 250 V, Ie = 3 A maximum, Ith = 3 A			

Dimensions

ZCE 01 + ZCY 18	ZCE 01 + ZCY 45	ZCE 01 + ZCY 39	ZCE 01 + ZCY 49	ZCE 06
				
ZCE H2				
				

(3) Fixing nut thickness
3.5 mm.

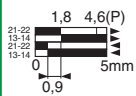
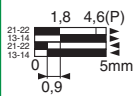
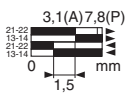
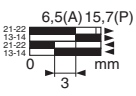
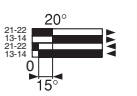
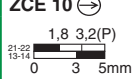
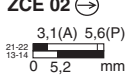
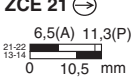
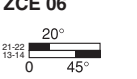
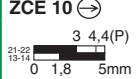
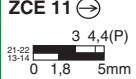
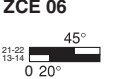
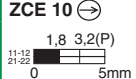
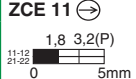
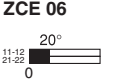
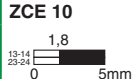
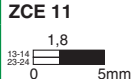
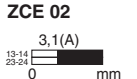
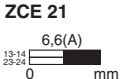
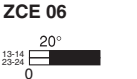
Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, plastic, type XCK T

Complete units with 2 ISO M16 x 1.5 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	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	"Cat's whisker" (4)

References (2) (3)					
 2-pole N/C + N/O snap action (XE2S P3151)	XCK T2110P16 → 	XCK T2111P16 → 	XCK T2102P16 → 	XCK T2121P16 → 	XCK T2106P16 
 2-pole N/C + N/O break before make, slow break (XE2N P3151)	ZCT 25P16 + ZCE 10 → 	ZCT 25P16 + ZCE 11 → 	ZCT 25P16 + ZCE 02 → 	ZCT 25P16 + ZCE 21 → 	ZCT 25P16 + ZCE 06 
 2-pole N/C + N/O make before break, slow break (XE2N P3161)	ZCT 26P16 + ZCE 10 → 	ZCT 26P16 + ZCE 11 → 	ZCT 26P16 + ZCE 02 → 	ZCT 26P16 + ZCE 21 → 	ZCT 26P16 + ZCE 06 
 2-pole N/C + N/C simultaneous, slow break (XE2N P3141)	ZCT 27P16 + ZCE 10 → 	ZCT 27P16 + ZCE 11 → 	ZCT 27P16 + ZCE 02 → 	ZCT 27P16 + ZCE 21 → 	ZCT 27P16 + ZCE 06 
 2-pole N/O + N/O simultaneous, slow break (XE2N P3131)	ZCT 28P16 + ZCE 10 	ZCT 28P16 + ZCE 11 	ZCT 28P16 + ZCE 02 	ZCT 28P16 + ZCE 21 	ZCT 28P16 + ZCE 06 
Weight (kg)	0.100	0.100	0.105	0.115	0.095
Contact operation	 contact closed (A) = cam displacement  contact open (P) = positive opening point				

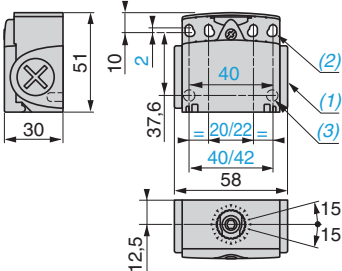
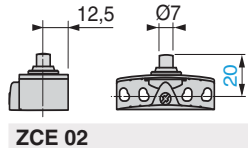
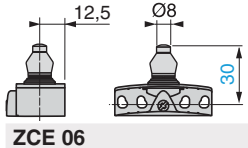
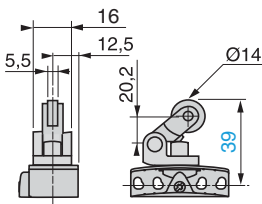
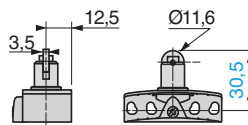
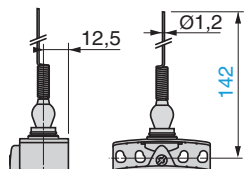
Characteristics				
Switch actuation	On end	By 30° cam	By any moving part	
Type of actuation				
Maximum actuation speed	0.5 m/s		1 m/s	1 m/s (any direction)
Mechanical durability (in millions of operating cycles)	15	10	15	5
Minimum force or torque	For tripping: 15 N For positive opening: 45 N	12 N 36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

(1) Form conforming to EN 50047, see page 5/198.

(2) Switches with gold contacts or ring connections: please consult our Regional Sales Office.

(3) For cable entries tapped for a n° 11 cable gland, replace P16 in the reference by G11. Example: XCK T2110P16 becomes XCK T2110G11.

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

Dimensions			
ZCT 2•P16	ZCE 10	ZCE 11	ZCE 21
			
	ZCE 02	ZCE 06	
			

(1) 2 tapped entries for ISO M16 x 1.5 or Pg 11 cable gland.

(2) 4 elongated holes Ø 4.3 x 6.3 mm on 22/42 mm ctrs., 4 holes Ø 4.3 on 20/40 mm ctrs.

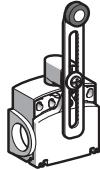
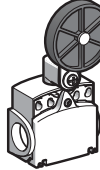
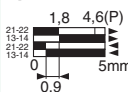
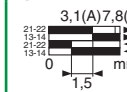
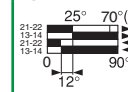
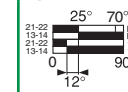
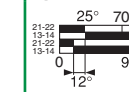
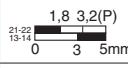
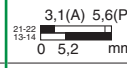
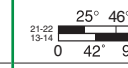
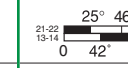
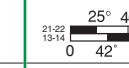
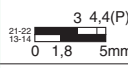
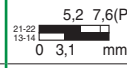
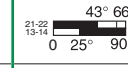
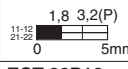
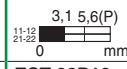
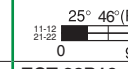
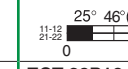
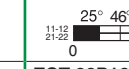
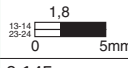
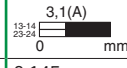
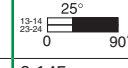
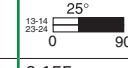
(3) 2 x Ø 3 holes for support studs, depth 4 mm.

Limit switches

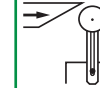
Osiswitch® Universal, Osiconcept®

Compact design, plastic, type XCK T

Complete units with 2 ISO M16 x 1.5 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 (2) (3)					
	XCK T21H0P16 	XCK T21H2P16 	XCK T2118P16 	XCK T2145P16 	XCK T2139P16 
	ZCT 25P16 + ZCE H0 	ZCT 25P16 + ZCE H2 	ZCT 25P16 + ZCE 01 + ZCY 18 	ZCT 25P16 + ZCE 01 + ZCY 45 	ZCT 25P16 + ZCE 01 + ZCY 39 
	ZCT 26P16 + ZCE H0 	ZCT 26P16 + ZCE H2 	ZCT 26P16 + ZCE 01 + ZCY 18 	ZCT 26P16 + ZCE 01 + ZCY 45 	ZCT 26P16 + ZCE 01 + ZCY 39 
	ZCT 27P16 + ZCE H0 	ZCT 27P16 + ZCE H2 	ZCT 27P16 + ZCE 01 + ZCY 18 	ZCT 27P16 + ZCE 01 + ZCY 45 	ZCT 27P16 + ZCE 01 + ZCY 39 
	ZCT 28P16 + ZCE H0 	ZCT 28P16 + ZCE H2 	ZCT 28P16 + ZCE 01 + ZCY 18 	ZCT 28P16 + ZCE 01 + ZCY 45 	ZCT 28P16 + ZCE 01 + ZCY 39 
Weight (kg)	0.145	0.145	0.145	0.155	0.160
Contact operation	 contact closed (A) = cam displacement  contact open (P) = positive opening point				
	 N/C contact with positive opening operation				

Characteristics

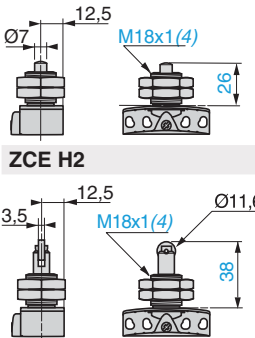
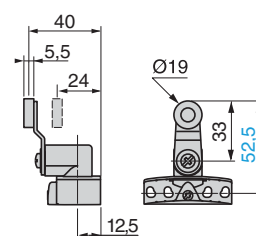
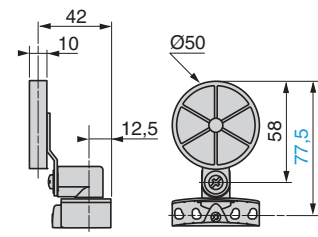
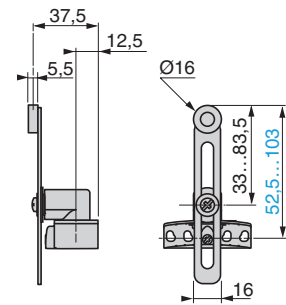
Switch actuation		On end			By 30° cam		
Type of actuation							
Maximum actuation speed		0.5 m/s			1.5 m/s		
Mechanical durability		10 million operating cycles					
Minimum force or torque	For tripping	15 N	10 N	0.1 N.m			
	For positive opening	45 N	36 N	0.25 N.m			
Cable entry (3)		2 entries tapped 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 5/198.

(2) Switches with gold contacts or ring type connections: please consult our Regional Sales Office.

(3) For cable entries tapped for a n° 11 cable gland, replace P16 in the reference by **G11**. Example: XCK T21H0P16 becomes **XCK T21H0G11**.

Dimensions

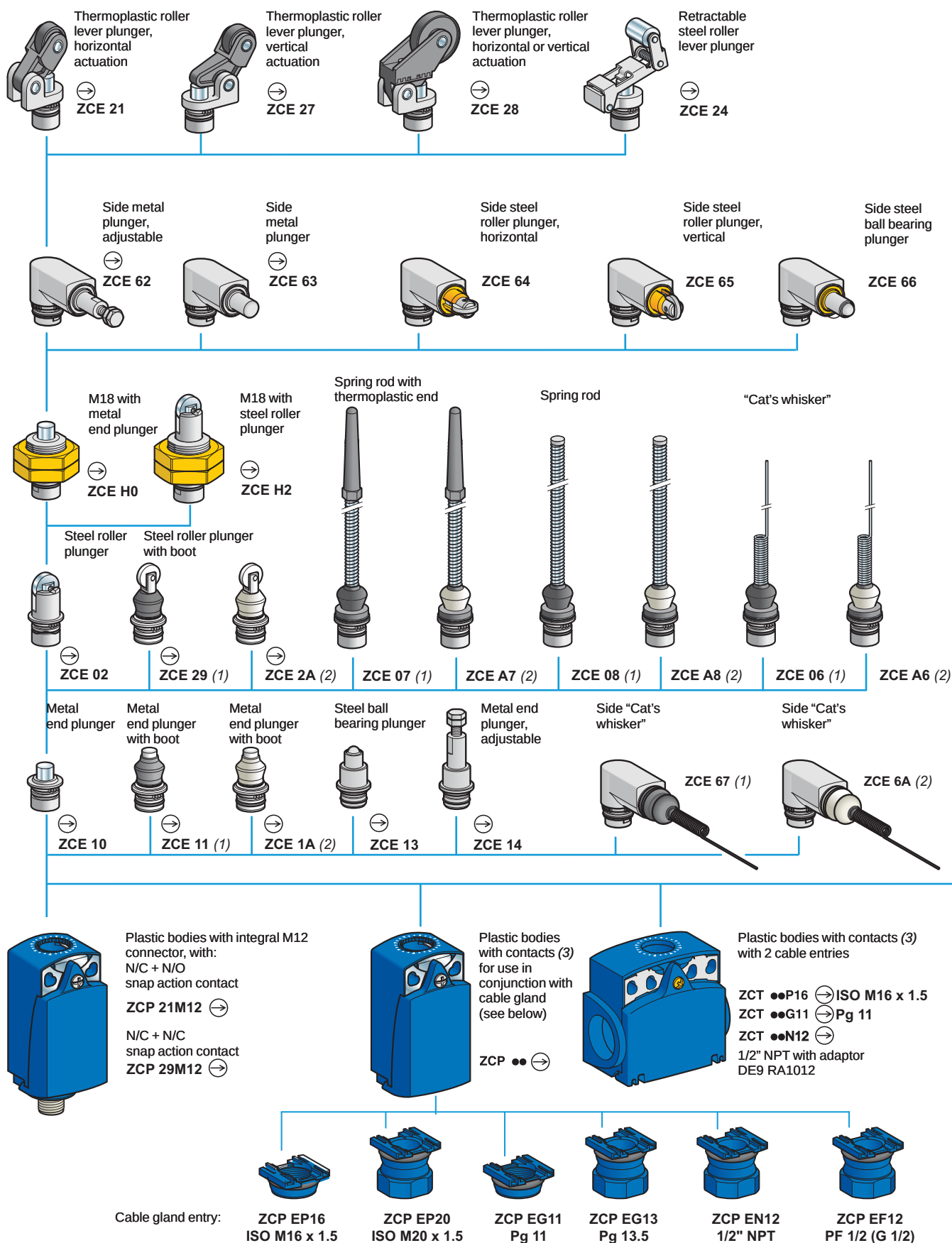
ZCE H0	ZCE 01 + ZCY 18	ZCE 01 + ZCY 39	ZCE 01 + ZCY 45
 Ø7, 12.5, M18x1(4), 26, 3.5, 12.5, Ø11.6, 38	 40, 5.5, 24, Ø19, 33, 52.5, 12.5	 42, 10, Ø50, 58, 77.5, 12.5	 37.5, 12.5, 5.5, Ø16, 33, 83.5, 52.5, 103, 16

(4) Fixing nut thickness 3.5 mm

Limit switches

Osiswitch® Universel, Osiconcept®

Compact design, types XCK D, XCK P and XCK T
Variable composition



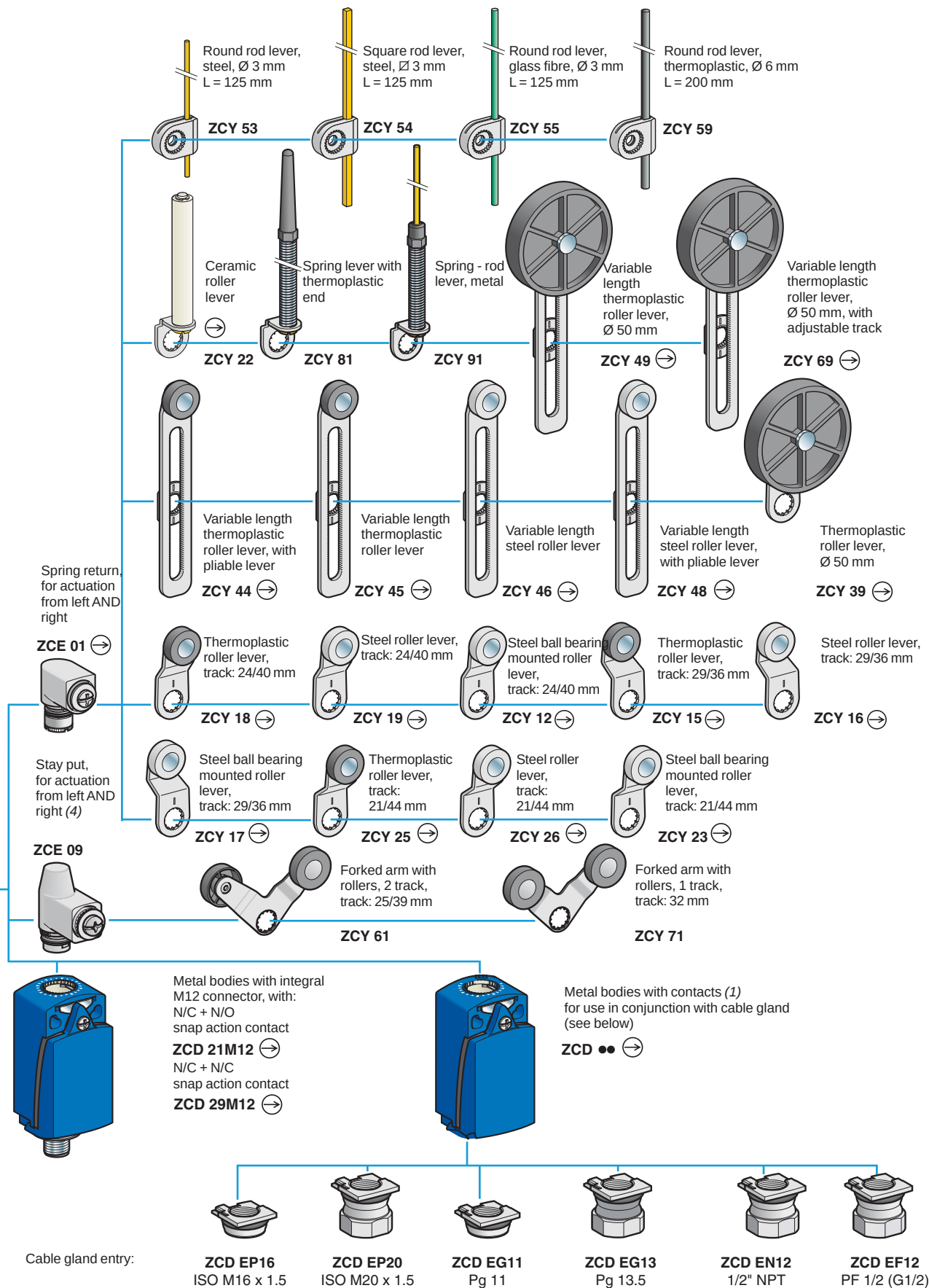
(1) Nitrile boot for indoor use.
(2) Silicone boot for outdoor use.
(3) For further details, see page 5/46.

Limit switches

Osiswitch® Universal, Osiconcept®

Compact design, types XCK D, XCK P and XCK T

Variable composition



(4) Cannot be used on bodies: ZCD 21, ZCP 21, ZCT 21, ZCD 29, ZCP 29, ZCD 31, ZCP 31, ZCD 39, ZCP 39, ZCD 2●M12, ZCP 2●M12.

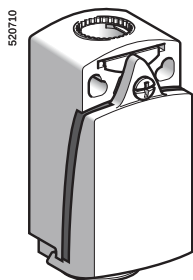
Limit switches

Osiswitch® Universal, **Osiconcept®**

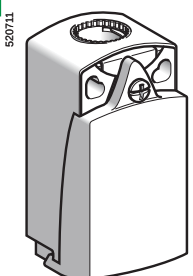
Compact design, metal, type XCK D or

plastic, types XCK P and XCK T

Adaptable sub-assemblies: bodies with contacts



ZCD ●●



ZCP ●●

Bodies with contacts, types XCK D and XCK P⁽¹⁾

Type of contact	Positive operation (2)	Scheme	Body material	Reference	Weight kg
2-pole					
N/C + N/O snap action (XE2S P2151)	⤴		Metal	ZCD 21	0.140
			Plastic	ZCP 21	0.070
N/C + N/C snap action (XE2S P2141)	⤴		Metal	ZCD 29	0.140
			Plastic	ZCP 29	0.070
N/C + N/O break before make, slow break (XE2N P2151)	⤴		Metal	ZCD 25	0.140
			Plastic	ZCP 25	0.070
N/O + N/C make before break, slow break (XE2N P2161)	⤴		Metal	ZCD 26	0.140
			Plastic	ZCP 26	0.070
N/C + N/C simultaneous, slow break (XE2N P2141)	⤴		Metal	ZCD 27	0.140
			Plastic	ZCP 27	0.070
N/O + N/O simultaneous, slow break (XE2N P2131)	-		Metal	ZCD 28	0.140
			Plastic	ZCP 28	0.070
3-pole					
N/C + N/O + N/O snap action (XE3S P2151)	⤴		Metal	ZCD 31	0.140
			Plastic	ZCP 31	0.070
N/C + N/C + N/O snap action (XE3S P2141)	⤴		Metal	ZCD 39	0.140
			Plastic	ZCP 39	0.070
N/C + N/C + N/O break before make, slow break (XE3N P2141)	⤴		Metal	ZCD 37	0.140
			Plastic	ZCP 37	0.070
N/C + N/O + N/O break before make, slow break (XE3N P2151)	⤴		Metal	ZCD 35	0.140
			Plastic	ZCP 35	0.070

(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

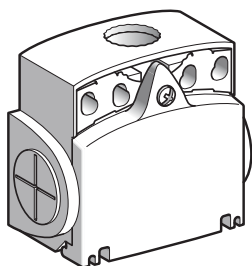
Osiswitch® Universal, Osiconcept®

Compact design, metal, type XCK D or

plastic, types XCK P and XCK T

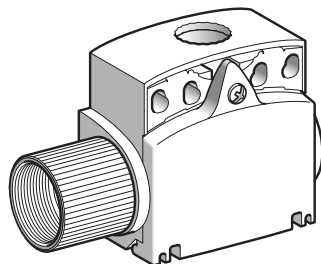
Adaptable sub-assemblies: bodies with contacts

561390



ZCT ●●●

561387



ZCT ●●N12

Bodies with contacts, type XCK T plastic, 2 cable entries

Type of contact	Positive operation (1)	Scheme	Cable entries	Reference	Weight kg
2-pole					
N/C + N/O snap action (XE2S P3151)	⊕		ISO M16 x 1.5 Pg 11	ZCT 21P16 ZCT 21G11	0.085 0.085
N/C + N/O break before make, slow break (XE2N P3151)	⊕		ISO M16 x 1.5 Pg 11	ZCT 25P16 ZCT 25G11	0.085 0.085
N/C + N/C simultaneous, slow break (XE2N P3141)	⊕		ISO M16 x 1.5 Pg 11	ZCT 27P16 ZCT 27G11	0.085 0.085
N/O + N/O simultaneous, slow break (XE2N P3131)	—		ISO M16 x 1.5 Pg 11	ZCT 28P16 ZCT 28G11	0.085 0.085
N/O + N/C make before break, slow break (XE2N P3161)	⊕		ISO M16 x 1.5 Pg 11	ZCT 26P16 ZCT 26G11	0.085 0.085

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

Type of contact	Positive operation (1)	Scheme	Reference	Weight kg
2-pole				
N/C + N/O snap action (XE2S P3151)	⊕		ZCT 21N12	0.130
N/C + N/O break before make, slow break (XE2N P3151)	⊕		ZCT 25N12	0.130
N/C + N/C simultaneous, slow break (XE2N P3141)	⊕		ZCT 27N12	0.130
N/O + N/O simultaneous, slow break (XE2N P3131)	—		ZCT 28N12	0.130
N/O + N/C make before break, slow break (XE2N P3161)	⊕		ZCT 26N12	0.130

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

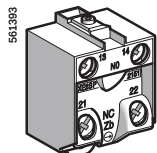
Limit switches

Osiswitch® Universal, **Osiconcept**®

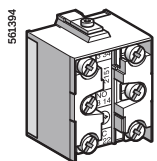
Compact design, metal, type XCK D or

plastic, types XCK P and XCK T

Adaptable sub-assemblies: contact blocks



XE2 • 21 • •



XE3 • 21 • •

Contact blocks with screw clamp terminals for XCK D and XCK P

Type of contact	Positive operation (1)	Scheme	Reference for standard contacts	Weight kg
2-pole				
N/C + N/O snap action	⊙		XE2S P2151	0.020
N/C + N/C simultaneous, snap action	⊙		XE2S P2141	0.020
N/C + N/O break before make, slow break	⊙		XE2N P2151	0.020
N/O + N/C make before break, slow break	⊙		XE2N P2161	0.020
N/C + N/C simultaneous, slow break	⊙		XE2N P2141	0.020
N/O + N/O simultaneous, slow break	—		XE2N P2131	0.020
3-pole				
N/C + N/O + N/O snap action	⊙		XE3S P2151	0.035
N/C + N/C + N/O snap action	⊙		XE3S P2141	0.035
N/C + N/C + N/O break before make, slow break	⊙		XE3N P2141	0.035
N/C + N/O + N/O break before make, slow break	⊙		XE3N P2151	0.035

Contact blocks with screw clamp terminals for XCK T

Type of contact	Positive operation (1)	Scheme	Reference for standard contacts	Weight kg
2-pole				
N/C + N/O snap action	⊙		XE2S P3151	0.015
N/C + N/O break before make, slow break	⊙		XE2N P3151	0.015
N/O + N/C make before break, slow break	⊙		XE2N P3161	0.015
N/C + N/C simultaneous, slow break	⊙		XE2N P3141	0.015
N/O + N/O simultaneous, slow break	—		XE2N P3131	0.015

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

Limit switches

Osiswitch® Optimum

Compact design, plastic, type XCK N

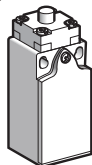
■ XCK N

with 1 cable entry

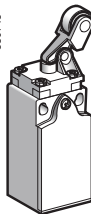
Conforming to CENELEC EN 50047

□ With head for linear movement (plunger)

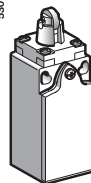
530748



530745



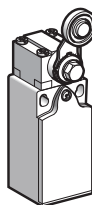
530747



Page 5/52

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

530749



530746



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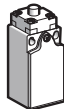
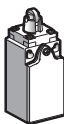
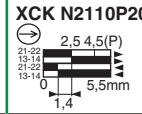
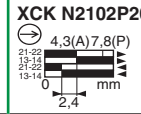
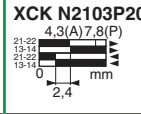
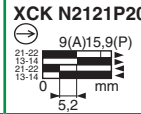
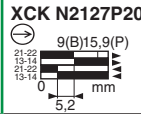
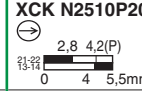
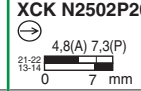
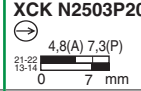
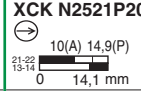
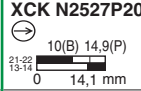
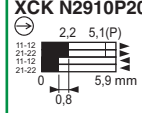
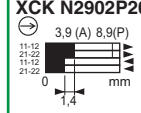
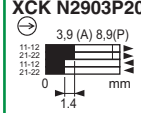
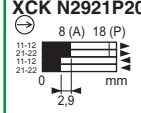
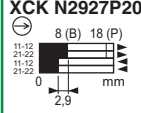
Environment characteristics		
Conforming to standards	Products	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications		UL, CSA, CCC
Protective treatment	Version	Standard "TC"
Ambient air temperature	Operation	- 25...+ 70 °C
	Storage	- 40...+ 70 °C
Vibration resistance	Conforming to IEC 60068-2-6	25 gn (10...500 Hz) except XCK N●●08: 10 gn, XCK N●●39 and XCK N●●49: 15 gn
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms) except XCK N2●49●● and XCK N●●39: 15 gn, XCK N2●08●●: 20 gn and XCK N2●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 cable gland, Pg 11 cable gland, ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry.
Materials	Bodies	Plastic
	Heads	Plastic
Contact block characteristics		
Rated operational characteristics		$\sim$ AC-15; A300 ($U_e = 240$ V, $I_e = 3$ A); $I_{the} = 10$ A $\equiv$ DC-13; R300 ($U_e = 250$ V, $I_e = 0.1$ A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage		$U_i = 500$ V degree of pollution 3 conforming to IEC 60947-1 $U_i = 300$ V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage		$U_{imp} = 6$ kV conforming to IEC 60947-1, IEC 60664
Positive operation		N/C 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 (gl)
Cabling	Screw clamp terminals	Clamping capacity, min: 1×0.34 mm ² , max: 2×1.5 mm ²

Limit switches

Osiswitch® Optimum

Compact design, plastic, type XCK N

Complete switches with 1 ISO M20 x 1.5 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
References of complete switches with 1 ISO M20 x 1.5 cable entry ⁽¹⁾						
	2 pole N/C + N/O snap action	 XCK N2110P20 2,5 4,5(P) 1,4 5,5 mm	 XCK N2102P20 4,3(A) 7,8(P) 2,4 mm	 XCK N2103P20 4,3(A) 7,8(P) 2,4 mm	 XCK N2121P20 9(A) 15,9(P) 5,2 mm	 XCK N2127P20 9(B) 15,9(P) 5,2 mm
	2 pole N/C + N/O break before make, slow break	 XCK N2510P20 2,8 4,2(P) 0 4 5,5 mm	 XCK N2502P20 4,8(A) 7,3(P) 0 7 mm	 XCK N2503P20 4,8(A) 7,3(P) 0 7 mm	 XCK N2521P20 10(A) 14,9(P) 0 14,1 mm	 XCK N2527P20 10(B) 14,9(P) 0 14,1 mm
	2 pole N/C + N/C snap action	 XCK N2910P20 2,2 5,1(P) 0,8 5,9 mm	 XCK N2902P20 3,9 (A) 8,9(P) 1,4 mm	 XCK N2903P20 3,9 (A) 8,9(P) 1,4 mm	 XCK N2921P20 8 (A) 18 (P) 2,9 mm	 XCK N2927P20 8 (B) 18 (P) 2,9 mm
Weight (kg)		0.065	0.065	0.065	0.070	0.070
Contacts operation		 contact closed (A) (B) = cam displacement  contact open (P) = positive opening point			 N/C 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 of 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.

Other cable entries

For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult your Regional Sales Office.

Other contacts

For complete switches with the following 2-pole contacts:

N/C + N/C simultaneous, slow break,

N/O + N/C make before break, slow break,

N/O + N/O simultaneous, slow break, please consult your Regional Sales Office.

For complete switches with the following 3-pole contacts:

N/C + N/O + N/O snap action,

N/C + N/C + N/O snap action,

N/C + N/C + N/O break before make, slow break,

N/C + N/O + N/O break before make, slow break, please consult your Regional Sales Office.

(1) Sold and packed in lots 20.

Limit switches

Osiswitch® Optimum

Compact design, plastic, type XCK N

Complete switches with 1 ISO M20 x 1.5 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"

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

	2 pole N/C + N/O snap action	XCK N2118P20 	XCK N2145P20 	XCK N2139P20 	XCK N2149P20 	XCK N2108P20 	XCK N2106P20
	2 pole N/C + N/O break before make, slow break	XCK N2518P20 	XCK N2545P20 	XCK N2539P20 	XCK N2549P20 	XCK N2508P20 	XCK N2506P20
	2 pole N/C + N/C snap action	XCK N2918P20 	XCK N2945P20 	XCK N2939P20 	XCK N2949P20 	XCK N2908P20 	XCK N2906P20
Weight (kg)		0.085	0.090	0.110	0.115	0.085	0.075
Contacts operation		■ contact closed □ contact open		(A) (B) = cam displacement (P) = positive opening point		↻ N/C 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 millions operating cycles	5 millions operating cycles
Minimum force of torque	For tripping For positive opening	0.1 N.m 0.13 N.m —
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm	

References of complete switches with 1 Pg 11 cable entry

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

Other cable entries

For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult your Regional Sales Office.

Other contacts

For complete switches with the following 2-pole contacts:

N/C + N/C simultaneous, slow break,
N/O + N/C make before break, slow break,
N/O + N/O simultaneous, slow break, please consult your Regional Sales Office.

For complete switches with the following 3-pole contacts:

N/C + N/O + N/O snap action,
N/C + N/C + N/O snap action,
N/C + N/C + N/O break before make, slow break,
N/C + N/O + N/O break before make, slow break, please consult your Regional Sales Office.

⁽¹⁾ Sold and packed in lots 20.

Limit switches

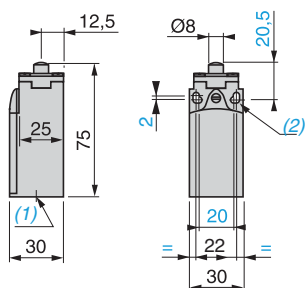
Osiswitch® Optimum

Compact design, plastic, type XCK N

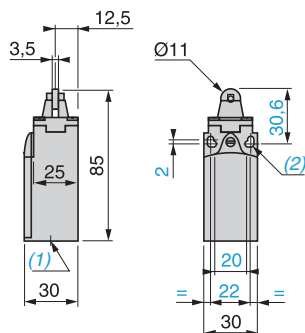
Complete switches with 1 ISO M20 x 1.5 cable entry

Dimensions

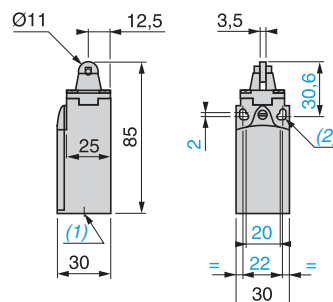
XCK N2●10P20



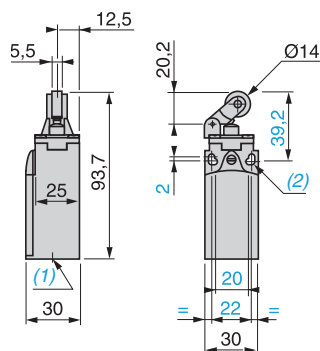
XCK N2●02P20



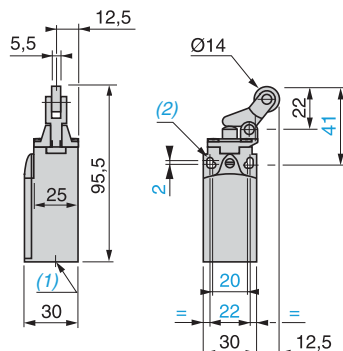
XCK N2●03P20



XCK N2●21P20



XCK N2●27P20



(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, 2 holes Ø 4.3 on 20 mm centres.

Limit switches

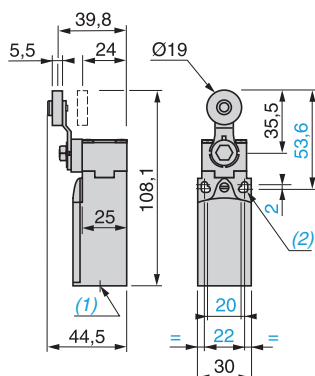
Osiswitch® Optimum

Compact design, plastic, type XCK N

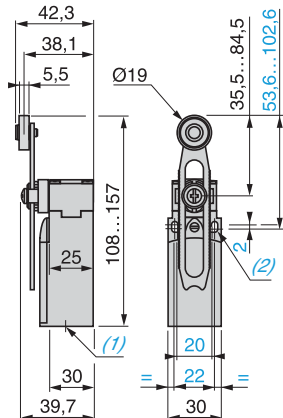
Complete switches with 1 ISO M20 x 1.5 cable entry

Dimensions

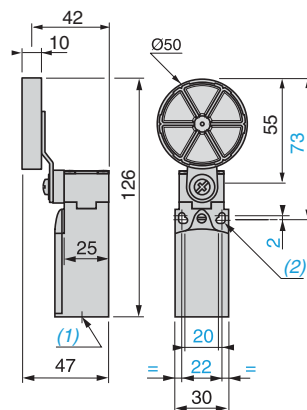
XCK N2•18P20



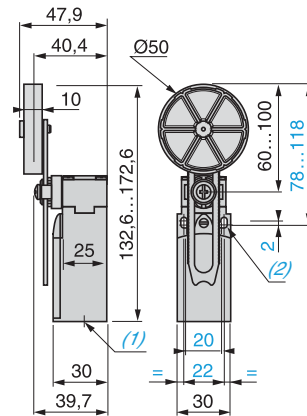
XCK N2•45P20



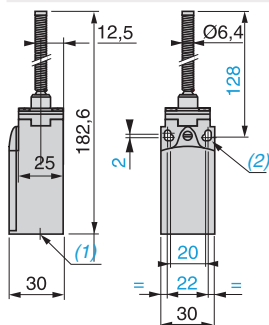
XCK N2•39P20



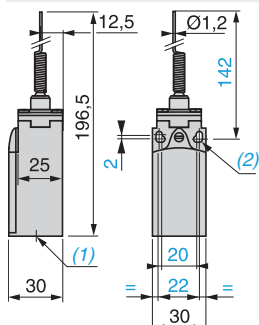
XCK N2•49P20



XCK N2•08P20



XCK N2•06P20



(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, 2 holes Ø 4.3 on 20 mm centres.

Limit switches

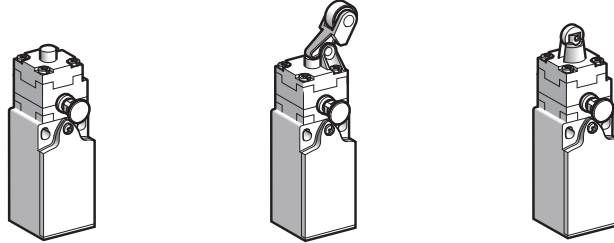
Osiswitch® Optimum

Compact design, plastic, with reset, type XCNR

■ XCNR

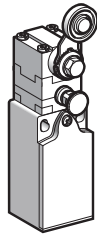
with 1 cable entry

□ With head for linear movement (plunger)



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□ With head for rotary movement (lever)



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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 cable gland, Pg 11 cable gland, ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry.
Materials	Bodies	Plastic
	Heads	Plastic

Contact block characteristics

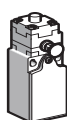
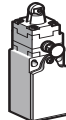
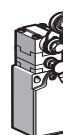
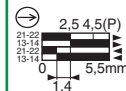
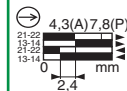
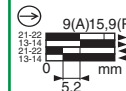
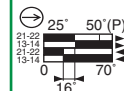
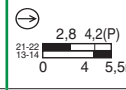
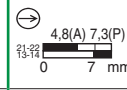
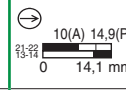
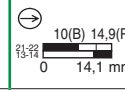
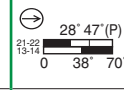
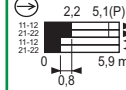
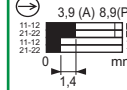
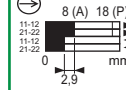
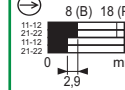
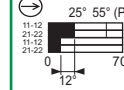
Rated operational characteristics	~ AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A
	≡ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
Positive operation	N/C 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 (gl)
Connection	Screw clamp terminals
	Clamping capacity, min: 1 x 0.34 mm ² , max: 2 x 1.5 mm ²

Limit switches

Osiswitch® Optimum

Compact design, plastic, with reset, 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 plunger
References of complete switches with 1 ISO M20 x 1.5 cable entry (1)					
 2 pole N/C + N/O snap action	XCNR 2110P20 	XCNR 2102P20 	XCNR 2121P20 	XCNR 2127P20 	XCNR 2118P20 
 2 pole N/C + N/O break before make, slow break	XCNR 2510P20 	XCNR 2502P20 	XCNR 2521P20 	XCNR 2527P20 	XCNR 2518P20 
 2 pole N/C + N/C snap action	XCNR 2910P20 	XCNR 2902P20 	XCNR 2921P20 	XCNR 2927P20 	XCNR 2918P20 
Weight (kg)	0.080	0.080	0.085	0.090	0.100
Contacts operation	 contact closed (A) (B) = cam displacement  contact open (P) = positive opening point  N/C 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 of 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 : XCNR 2110P20 becomes **XCNR 2110G11**.

Other cable entries

For complete switches with ISO M16 x 1.5 or PF 1/2 (G 1/2) cable entry, please consult your Regional Sales Office.

Other contacts

For complete switches with the following 2-pole contacts:

N/C + N/C simultaneous, slow break,

N/O + N/C make before break, slow break,

N/O + N/O simultaneous, slow break, please consult your Regional Sales Office.

For complete switches with the following 3-pole contacts:

N/C + N/O + N/O snap action,

N/C + N/C + N/O snap action,

N/C + N/C + N/O break before make, slow break,

N/C + N/O + N/O break before make, slow break, please consult your Regional Sales Office.

(1) Sold and packed in lots 20.

Limit switches

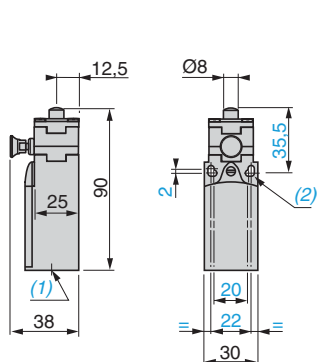
Osiswitch® Optimum

Compact design, plastic, with reset, type XCNR

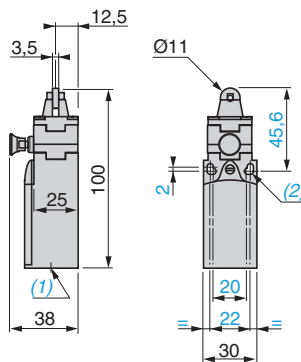
Complete switches with 1 cable entry

Dimensions

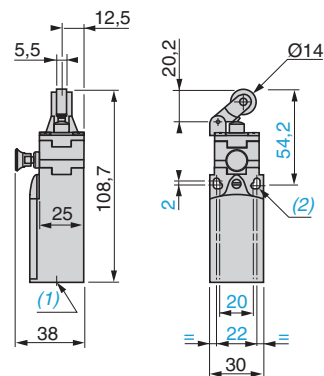
XCNR 2●10P20



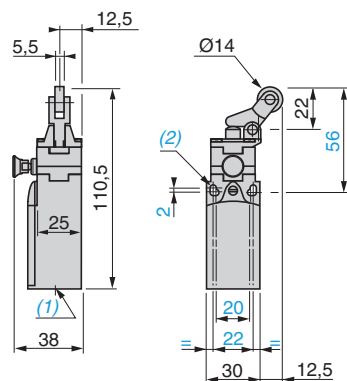
XCNR 2●02P20



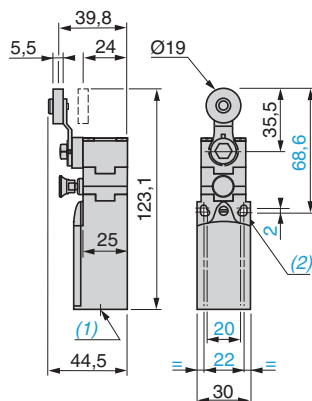
XCNR 2●21P20



XCNR 2●27P20



XCNR 2●18P20



(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, 2 holes Ø 4.3 on 20 mm centres.

Limit switches

Osiswitch® Application

Compact design, plastic, with reset,

types XCP R and XCT R

Compact design, metal, with reset, type XCD R

■ XCP R, XCD R

with 1 cable entry
conforming to EN 50047

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

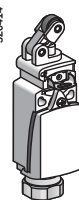
XCD R

520412



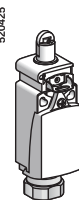
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520414



XCP R

520425



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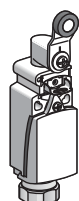
520427



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

XCD R

520416



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XCP R

520428



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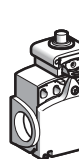
■ XCT R

with 2 cable entries
Tripping/resetting points and fixing centres
conforming to EN 50047

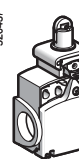
□ With head for linear movement (plunger). Fixing by the body.

XCT R

520436



520437



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

XCT R

520438



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Limit switches

Osiswitch® Application

Compact design, plastic, with reset,

types XCP R and XCT R

Compact design, metal, with reset, type XCD R

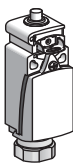
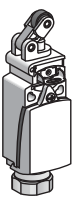
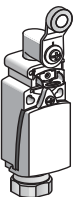
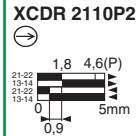
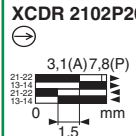
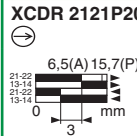
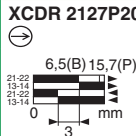
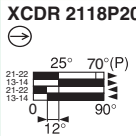
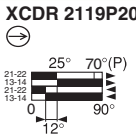
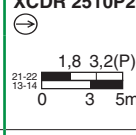
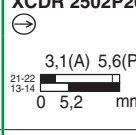
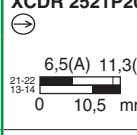
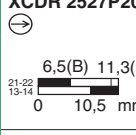
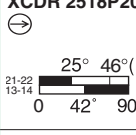
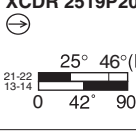
Environment characteristics		
Conformity to standards	Products	EN/IEC 60947-5-1, EN/IEC 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	EN/IEC 60204-1
Product certifications		UL, CSA
Protective treatment	Standard version	"TC"
Ambient air temperature	Operation	- 25...+ 70 °C
	Storage	- 40...+ 70 °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 XCP R and XCT R
		Class I conforming to IEC 61140 and NF C 20-030 for XCD R
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		XCD R : zamak bodies and heads, XCP R and XCT R : 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, EN/IEC 60947-5-1
Rated insulation voltage		Ui = 500 V degree of pollution 3 conforming to EN/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)		N/C contacts with positive opening operation conforming to EN/IEC 60947-5-1 Appendix K, EN/IEC 60947-5-1
Resistance across terminals		≤ 25 mΩ conforming to IEC 60255-7 category 3
Short-circuit protection		10 A cartridge fuse type gG (gl)
Cabling (screw clamp terminals)	XE2S P2151	Clamping capacity, min: 1 x 0.34 mm², max: 2 x 1.5 mm²
	XE2N P2151	Clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm²
Minimum actuation speed (for head with end plunger)		XE2S P2151 : 0.01 m/minute
		XE2N P2151 : 6 m/minute

Limit switches

Osiswitch® Application

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 N/C + N/O snap action (XE2S P2151)	XCDR 2110P20 	XCDR 2102P20 	XCDR 2121P20 	XCDR 2127P20 	XCDR 2118P20 	XCDR 2119P20 
 2-pole N/C + N/O break before make, slow break (XE2N P2151)	XCDR 2510P20 	XCDR 2502P20 	XCDR 2521P20 	XCDR 2527P20 	XCDR 2518P20 	XCDR 2519P20 
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: XCDR 2110P20 becomes **XCDR 2110G13**.

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

For complete switches with 1 1/2" NPT cable entry replace P20 by **N12**.
Example: XCDR 2110P20 becomes **XCDR 2110N12**.

Contact operation	 contact closed  contact open	(A) (B) = cam displacement (P) = positive opening point	 N/C 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 For positive opening: 45 N	12 N 36 N	6 N 18 N
Cable entry	1 entry tapped M20 x 1.5 mm for ISO cable gland, clamping capacity 7 to 13 mm, or 1 entry tapped Pg 13.5 for cable gland, clamping capacity 9 to 12 mm, or 1 entry tapped for 1/2" NPT (USAS B2-1) conduit		

Limit switches

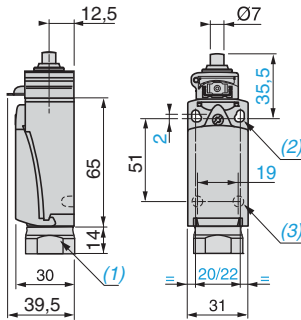
Osiriswitch® Application

Compact design, metal, with reset, type XCDR

Complete switches with 1 cable entry

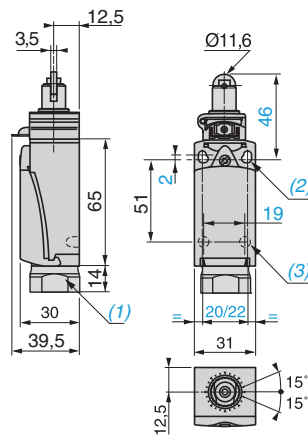
Dimensions

XCDR 2•10•••

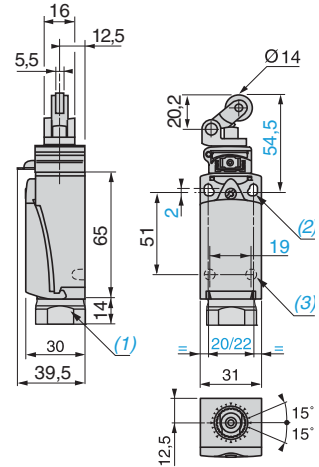


- (1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or 1/2" NPT conduit.
- (2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
- (3) 2 x Ø 3 holes for support studs, depth 4 mm.

XCDR 2•20•••

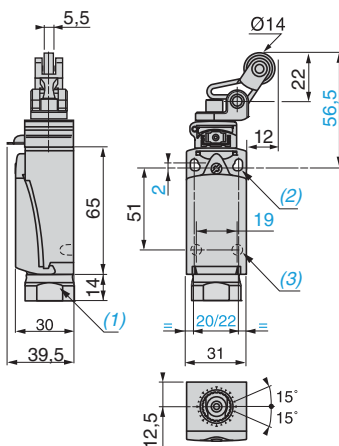


XCDR 2•21•••

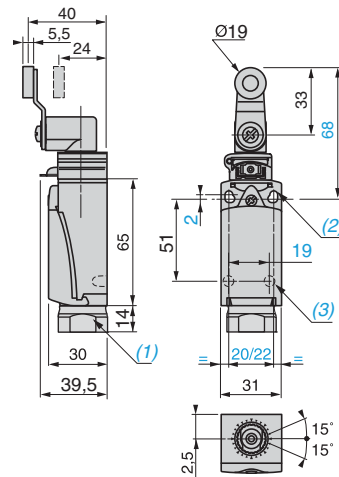


Dimensions

XCDR 2•27•••



XCDR 2•18•••, XCDR 2•19•••



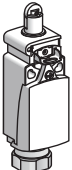
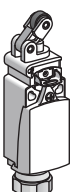
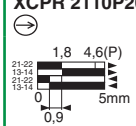
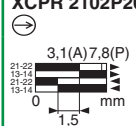
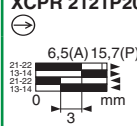
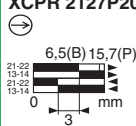
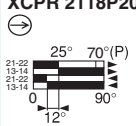
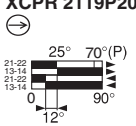
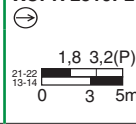
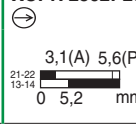
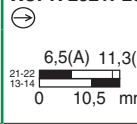
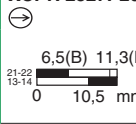
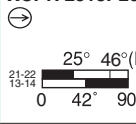
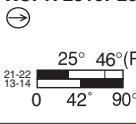
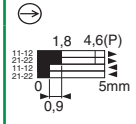
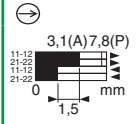
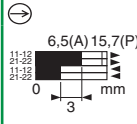
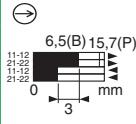
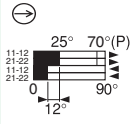
- (1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or 1/2" NPT conduit.
- (2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
- (3) 2 x Ø 3 holes for support studs, depth 4 mm.

Limit switches

Osiswitch® Application

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 N/C + N/O snap action (XE2S P2151)	XCPR 2110P20 	XCPR 2102P20 	XCPR 2121P20 	XCPR 2127P20 	XCPR 2118P20 	XCPR 2119P20 
 2-pole N/C + N/O break before make, slow break (XE2N P2151)	XCPR 2510P20 	XCPR 2502P20 	XCPR 2521P20 	XCPR 2527P20 	XCPR 2518P20 	XCPR 2519P20 
 2-pole N/C + N/O snap action (XE2S P2141)	XCPR 2910P20 	XCPR 2902P20 	XCPR 2921P20 	XCPR 2927P20 	XCPR 2918P20 	–
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: XCPR 2110P20 becomes **XCPR 2110G13**.

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

For complete switches with 1 1/2" NPT cable entry replace P20 by **N12**.
 Example: XCPR 2110P20 becomes **XCPR 2110N12**.

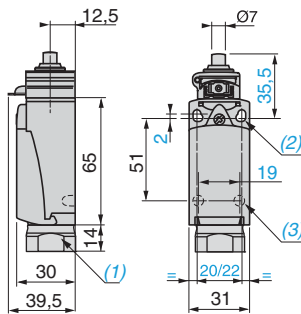
Contact operation	 contact closed  contact open	(A) (B) = cam displacement (P) = positive opening point			 N/C contact with positive opening operation
Characteristics					
Switch actuation	On end	By 30° cam			
Type of actuation					
Maximum actuation speed	0.5 m/s	1 m/s			1.5 m/s
Minimum force or torque	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, or 1 entry tapped Pg 13.5 for cable gland, clamping capacity 9 to 12 mm, or 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 your Regional Sales Office.

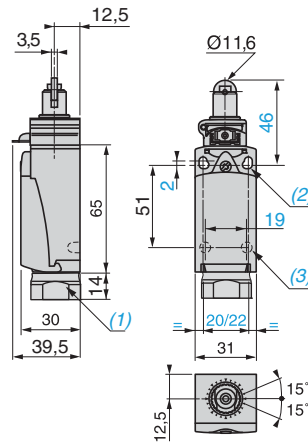
Dimensions

XCPR 2•10•••

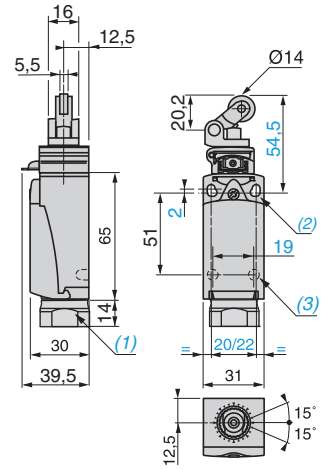


- (1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or 1/2" NPT conduit.
 (2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
 (3) 2 x Ø 3 holes for support studs, depth 4 mm.

XCPR 2•02•••

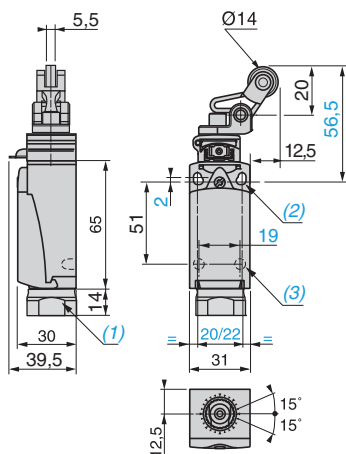


XCPR 2•21•••

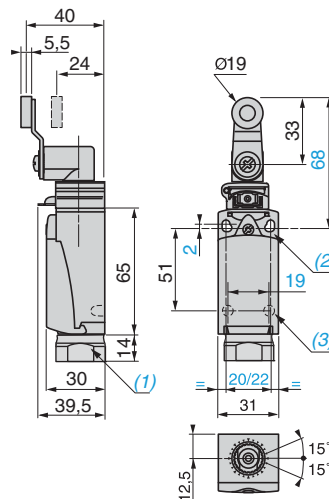


Dimensions

XCPR 2•27•••



XCPR 2•18•••, XCPR 2•19•••



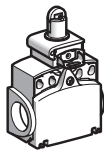
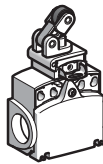
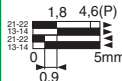
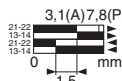
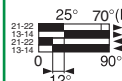
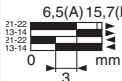
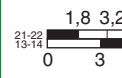
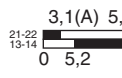
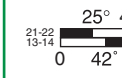
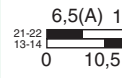
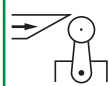
- (1) Tapped entry for ISO M20 x 1.5 or Pg 13.5 cable gland or 1/2" NPT conduit.
 (2) 2 elongated holes Ø 4.3 x 6.3 mm on 22 mm centres, 2 holes Ø 4.3 on 20 mm centres.
 (3) 2 x Ø 3 holes for support studs, depth 4 mm.

Limit switches

Osiswitch® Application

Compact design, plastic, with reset, type XCTR

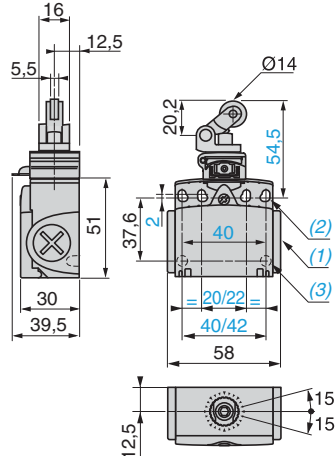
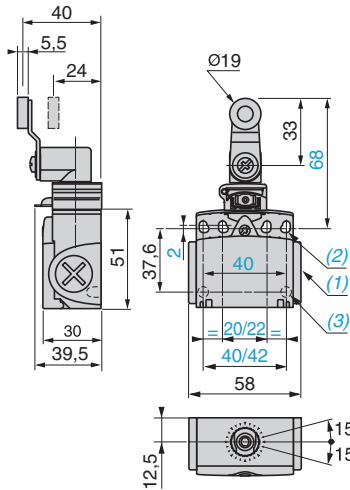
Complete switches with 2 cable entries

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 N/C + N/O snap action (XE2S P3151)					
		XCTR 2110P16 →	XCTR 2102P16 →	XCTR 2118P16 →	XCTR 2121P16 →	
	2-pole N/C + N/O break before make, slow break (XE2N P3151)					
		XCTR 2510P16 →	XCTR 2502P16 →	XCTR 2518P16 →	XCTR 2521P16 →	
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: XCTR 2110P16 becomes XCTR 2110G11 .						
References of complete switches with 2 1/2" NPT cable entries						
For complete switches with 2 1/2" NPT cable entries replace P16 by N12 . Example: XCTR 2110P16 becomes XCTR 2110N12 .						
Weight (kg)		0.120	0.125	0.165	0.135	
Contact operation		 contact closed  contact open	(A) = cam displacement (P) = positive opening point → N/C 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 For positive opening	15 N 45 N	12 N 36 N	0.1 N.m 0.25 N.m	6 N 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, or 2 entries tapped Pg 11 for cable gland, clamping capacity 7 to 10 mm, or 2 entries tapped for 1/2" NPT (USAS B2-1) conduit using Pg 11 - 1/2" NPT adaptor DE9 RA1012 (1 entry fitted with adaptor)				

Dimensions

XCTR 2●18●●●

XCTR 2●21●●●



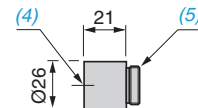
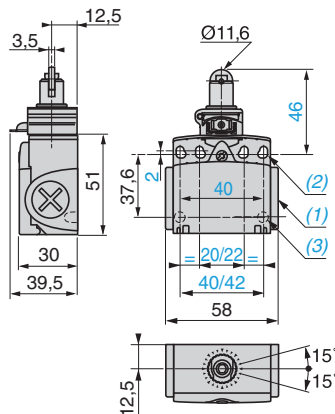
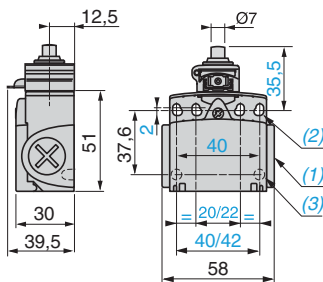
- (1) Tapped entry for ISO M16 x 1.5 or Pg 11 cable gland or 1/2" NPT conduit.
 (2) 4 elongated holes Ø 4.3 x 6.3 mm on 22/42 mm centres, 4 holes Ø 4.3 on 20/40 mm centres.
 (3) 2 x Ø 3 holes for support studs, depth 4 mm.

Dimensions

XCTR 2●10●●●

XCTR 2●02●●●

DE9 RA1012



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

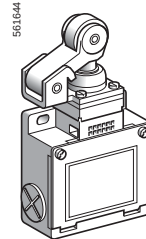
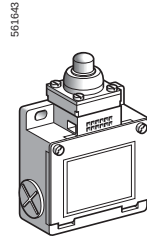
Limit switches

Osiswitch® Classic

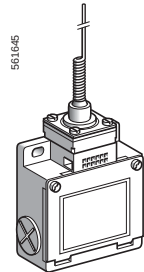
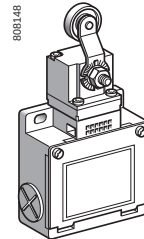
Metal, types XCK M, XCK L and XCK ML

■ XCK M with 3 cable entries

□ With plunger head



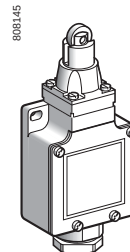
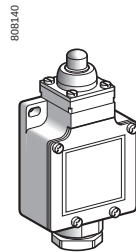
□ With rotary or multi-directional head



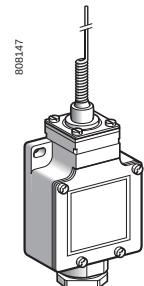
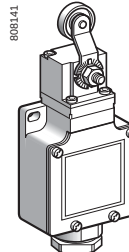
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■ XCK L with 1 cable entry

□ With plunger head



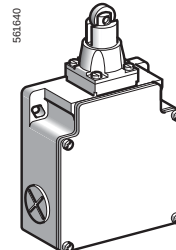
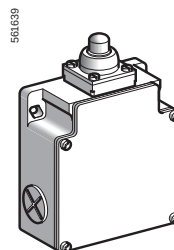
□ With rotary or multi-directional head



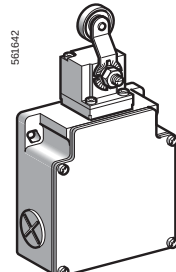
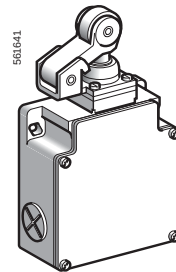
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■ XCK ML with 3 cable entries and two 2-pole contacts

□ With plunger head



□ With rotary or multi-directional head



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Environment characteristics

Conforming 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 (for XCKM)
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		XCK ML 0.1 mm ; XCK M and XCK L 0.05 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry or integral connector	Depending on model	XCK M: 3 tapped entries for n° 11 cable glands, or tapped M20 with 1/2" NPT adaptor XCK L: 1 tapped entry incorporating cable gland or 1 tapped entry 1/2" NPT XCK ML: 3 tapped entries for n° 13 cable gland, or tapped M20
Materials		Bodies : zamak Rotary heads : zamak or plastic depending on model ; other heads : plastic

Contact block characteristics		
Rated operational characteristics	XE2● P	~ AC-15 ; A300 (Ue = 240 V, Ie = 3 A) ; Ithe = 10 A --- DC-13 ; Q300 (Ue = 250 V, Ie = 0,27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3● P	~ AC-15 ; B300 (Ue = 240 V, Ie = 1,5 A) ; Ithe = 6 A --- DC-13 ; R300 (Ue = 250 V, Ie = 0,1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage	XE2● P	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
	XE3● P	Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	XE2● P	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
	XE3● P	U imp = 4 kV conforming to IEC 60947-1, IEC 60664
Positive operation (depending on model)		N/C contacts with positive opening operation conforming to IEC 947-5-1 Section 3, EN 60 947-5-1
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)
Cabling (screw and captive cable clamp terminals)	XE2S P21●1	Clamping capacity, min : 1 x 0,34 mm², max : 2 x 1,5 mm²
	XE2N P21●1	Clamping capacity, min : 1 x 0,5 mm², max : 2 x 2,5 mm²
	XES P2151L and XEN P2151L	Clamping capacity, min : 1 x 0,34 mm², max : 2 x 1,5 mm² or 1 x 2,5 mm²
	XE3N P et XE3S P	Clamping capacity, min : 1 x 0,34 mm², max : 1 x 1 mm² or 2 x 0,75 mm²
Minimum actuation speed		XE2S P21●1, XES P2151L and XE3S P : 0,01 m/minute XE2N P21●1, XEN P2151L 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

a.c. supply ~ 50/60 Hz ~ inductive circuit	XE2S P21●1, XE2S P2141, XES P2151L																														
	<table><tr><th colspan="5">Power broken in W for 5 million operating cycles.</th></tr><tr><th>Voltage</th><th>V</th><th>24</th><th>48</th><th>120</th></tr><tr><td>~ W</td><td></td><td>10</td><td>7</td><td>4</td></tr></table>	Power broken in W for 5 million operating cycles.					Voltage	V	24	48	120	~ W		10	7	4	<table><tr><th colspan="5">Power broken in W for 5 million operating cycles.</th></tr><tr><th>Voltage</th><th>V</th><th>24</th><th>48</th><th>120</th></tr><tr><td>~ W</td><td></td><td>13</td><td>9</td><td>7</td></tr></table>	Power broken in W for 5 million operating cycles.					Voltage	V	24	48	120	~ W		13	9
Power broken in W for 5 million operating cycles.																															
Voltage	V	24	48	120																											
~ W		10	7	4																											
Power broken in W for 5 million operating cycles.																															
Voltage	V	24	48	120																											
~ W		13	9	7																											
d.c. supply ---		For XE2S P●151 on ~ or ---, the "N/C" and "N/O" contacts are simultaneously loaded to the values shown with reverse polarity.																													

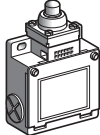
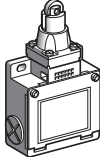
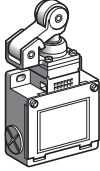
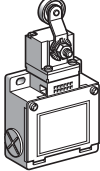
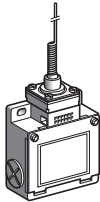
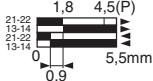
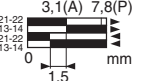
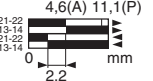
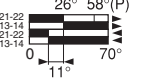
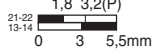
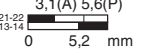
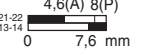
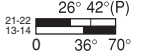
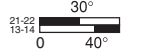
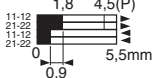
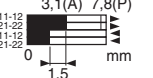
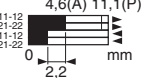
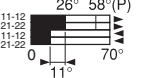
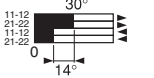
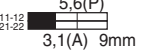
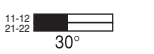
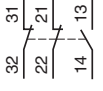
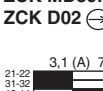
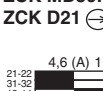
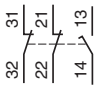
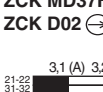
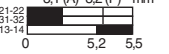
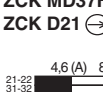
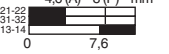
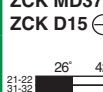
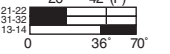
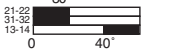
a.c. supply ~ 50/60 Hz ~ inductive circuit	XE3S P●●●●																														
	<table><tr><th colspan="5">Power broken in W for 5 million operating cycles.</th></tr><tr><th>Voltage</th><th>V</th><th>24</th><th>48</th><th>120</th></tr><tr><td>~ W</td><td></td><td>3</td><td>2</td><td>1</td></tr></table>	Power broken in W for 5 million operating cycles.					Voltage	V	24	48	120	~ W		3	2	1	<table><tr><th colspan="5">Power broken in W for 5 million operating cycles.</th></tr><tr><th>Voltage</th><th>V</th><th>24</th><th>48</th><th>120</th></tr><tr><td>~ W</td><td></td><td>4</td><td>3</td><td>2</td></tr></table>	Power broken in W for 5 million operating cycles.					Voltage	V	24	48	120	~ W		4	3
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	2																											
d.c. supply ---																															

Limit switches

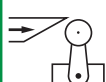
Osiswitch® Classic

Metal, type XCK M

Complete switches with 3 ISO M20 x 1.5 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" (4)
References (2) (3)					
2-pole N/C + N/O snap action (XE2S P2151)	 XCK M110H29  	 XCK M102H29  	 XCK M121H29  	 XCK M115H29  	 XCK M106H29 
2-pole N/C + N/O break before make, slow break (XE2N P2151)	 XCK M510H29  	 XCK M502H29  	 XCK M521H29  	 XCK M515H29  	 XCK M506H29 
2-pole N/C + N/C snap action (XE2S P2141)	 ZCK M9H29 + ZCK D10  	 ZCK M9H29 + ZCK D02  	 ZCK M9H29 + ZCK D21  	 ZCK M9H29 + ZCK D15  	 ZCK M9H29 + ZCK D06 
2-pole N/C + N/C simultaneous, slow break (XE2N P2141)	 ZCK M7H29 + ZCK D10  	 ZCK M7H29 + ZCK D02  	 ZCK M7H29 + ZCK D21  	 ZCK M7H29 + ZCK D15  	 ZCK M7H29 + ZCK D06 
3-pole N/C + N/C + N/O snap action (XE3S P2141)	 ZCK MD39H29 + ZCK D10  	 ZCK MD39H29 + ZCK D02  	 ZCK MD39H29 + ZCK D21  	 ZCK MD39H29 + ZCK D15  	 ZCK MD39H29 + ZCK D06 
3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)	 ZCK MD37H29 + ZCK D10  	 ZCK MD37H29 + ZCK D02  	 ZCK MD37H29 + ZCK D21  	 ZCK MD37H29 + ZCK D15  	 ZCK MD37H29 + ZCK D06 
Weight (kg)	0.250	0.255	0.300	0.280	0.250
Contact operation	 contact closed (A) = cam displacement  contact open (P) = positive opening point  N/C 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 (5) (in millions of operating cycles)	20	15			10
Minimum force or torque	For tripping	15 N	12 N	8 N	0.1 N.m
	For positive opening	45 N	36 N	24 N	0.25 N.m
Cable entry (3)	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) Switches with gold contacts or eyelet type connections: please consult your Regional Sales Office.

(3) For an entry tapped for a Pg 11 cable gland, delete H29 from the end of the reference. Example: XCK M110H29 becomes XCK M110.

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

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

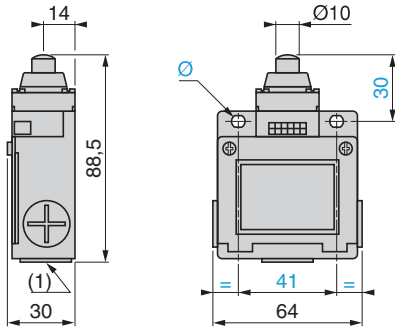
Limit switches

Osiswitch® Classic

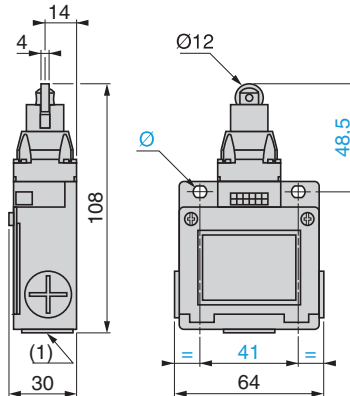
Metal, type XCK M

Complete switches with 3 ISO M20 x 1.5 cable entries

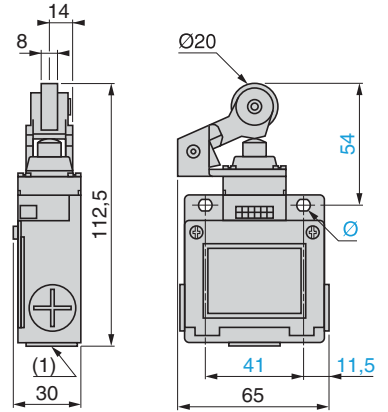
XCK M●10
ZCK MD3● + ZCK D10



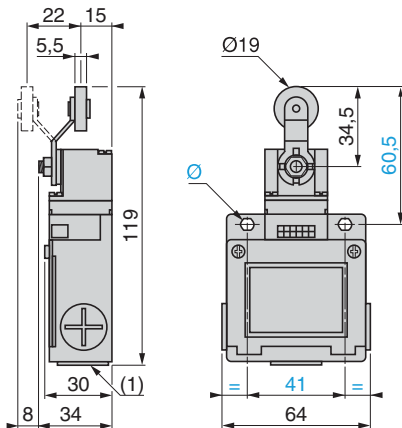
XCK M●02
ZCK MD3● + ZCK D02



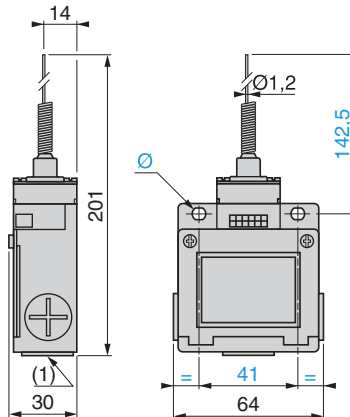
XCK M●21
ZCK MD3● + ZCK D21



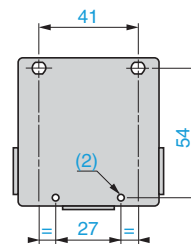
XCK M●15
ZCK MD3● + ZCK D15



XCK M●06
ZCK MD3● + ZCK D06



Rear view
XCK M●●●, ZCK M●, ZCK MD3●

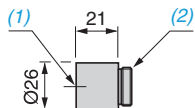


(1) 3 tapped entries for ISO M20 x 1.5 or Pg 11 cable gland or with 1/2" NPT conduit adaptor DE9 RA1012.

(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
DE9 RA1012



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

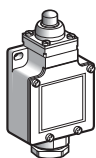
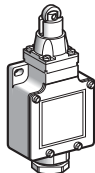
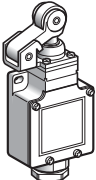
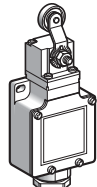
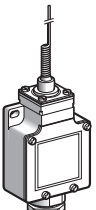
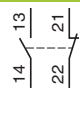
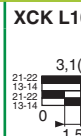
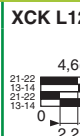
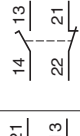
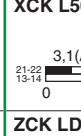
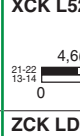
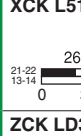
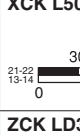
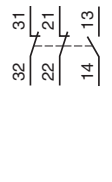
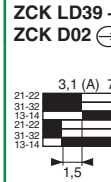
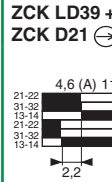
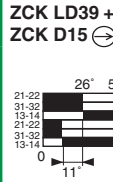
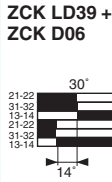
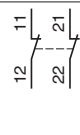
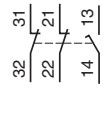
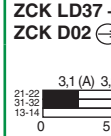
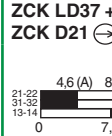
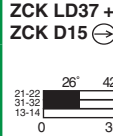
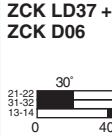
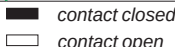
(2) Threaded sleeve.

Limit switches

Osiswitch® Classic

Metal, type XCK L

Complete switches incorporating 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 N/C + N/O snap action (XE2S P2151)	 XCK L110 ⊙ 1,8 4,5(P) 0,9 5,5mm	 XCK L102 ⊙ 3,1(A) 7,8(P) 0 1,5 mm	 XCK L121 ⊙ 4,6(A) 11,1(P) 0 2,2 mm	 XCK L115 ⊙ 26° 58°(P) 0 11° 70°	 XCK L106 30° 0 14°
2-pole N/C + N/O break before make, slow break (XE2N P2151)	 XCK L510 ⊙ 1,8 3,2(P) 0 3 5,5mm	 XCK L502 ⊙ 3,1(A) 5,6(P) 0 5,2 mm	 XCK L521 ⊙ 4,6(A) 8(P) 0 7,6 mm	 XCK L515 ⊙ 26° 42°(P) 0 36° 70°	 XCK L506 30° 0 40°
3-pole N/C + N/C + N/O snap action (XE3S P2141)	 ZCK LD39 + ZCK D10 ⊙ 1,8 4,5 (P) mm 0,9 5,5	 ZCK LD39 + ZCK D02 ⊙ 3,1 (A) 7,8 (P) mm 1,5	 ZCK LD39 + ZCK D21 ⊙ 4,6 (A) 11,1 (P) mm 2,2	 ZCK LD39 + ZCK D15 ⊙ 26° 58° (P) 0 11° 70°	 ZCK LD39 + ZCK D06 30° 14°
2-pole N/C + N/C simultaneous, slow break (XE2N P2141)	 ZCK L7 + ZCK D10 ⊙ 3,2(P) 1,8 5,5mm	 ZCK L7 + ZCK D02 ⊙ 5,6(P) 3,1(A) 9mm	 ZCK L7 + ZCK D21 ⊙ 8(P) 4,6(A) mm	 ZCK L7 + ZCK D15 ⊙ 42°(P) 23° 70°	 ZCK L7 + ZCK D06 30°
3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)	 ZCK LD37 + ZCK D10 ⊙ 1,8 3,2 (P) mm 0 3 5,5	 ZCK LD37 + ZCK D02 ⊙ 3,1 (A) 3,2 (P) mm 0 5,2 5,5	 ZCK LD37 + ZCK D21 ⊙ 4,6 (A) 8 (P) mm 0 7,6	 ZCK LD37 + ZCK D15 ⊙ 26° 42° (P) 0 36° 70°	 ZCK LD37 + ZCK D06 30° 0 40°
Weight (kg)	0.255	0.260	0.305	0.285	0.255
Contact operation	 (A) = cam displacement (P) = positive opening point  N/C contact with positive opening operation				
Characteristics					
Switch actuation	On end	By 30° cam			By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s	1.5 m/s			1 m/s (any direction)
Mechanical durability (4) (in millions of operating cycles)	20	15			10
Minimum force or torque	For tripping For positive opening	15 N 45 N	12 N 36 N	8 N 24 N	0.1 N.m 0.25 N.m
Cable entry	1 entry incorporating metal cable gland. Clamping capacity 6 to 13.5 mm.				

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

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

(3) Switches with gold contacts or eyelet type connections: please consult your Regional Sales Office.

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

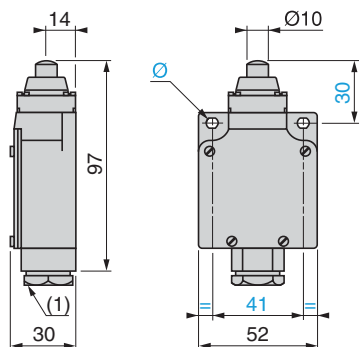
Limit switches

Osiswitch® Classic

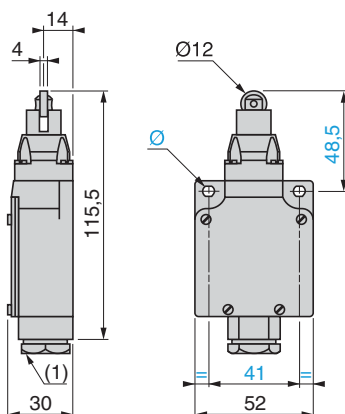
Metal, type XCK L

Complete switches incorporating cable gland

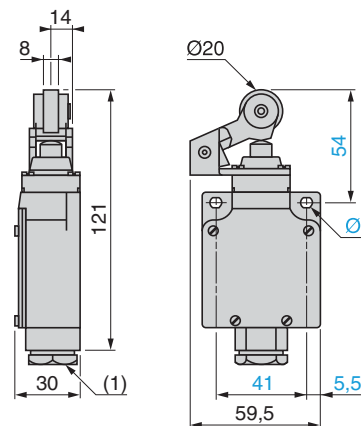
XCK L●10
ZCK L● + ZCK D10
ZCK LD3● + ZCK D10



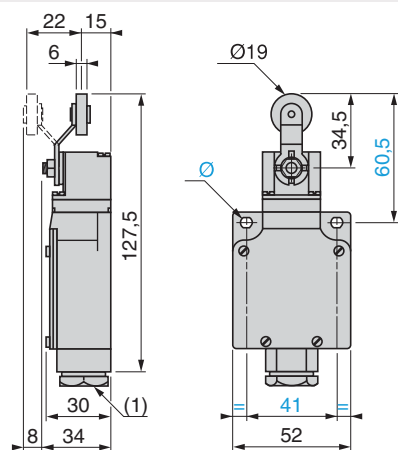
XCK L●02
ZCK L3● + ZCK D02
ZCK LD3● + ZCK D02



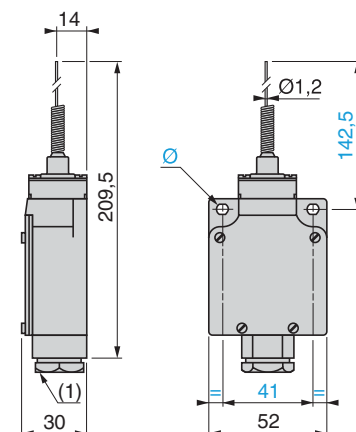
XCK L●21
ZCK L● + ZCK D21
ZCK LD3● + ZCK D21



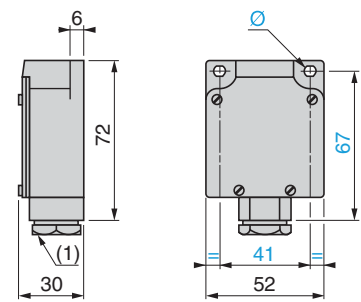
XCK L●15
ZCK L● + ZCK D15
ZCK LD3● + ZCK D15



XCK L●06
ZCK L● + ZCK D06
ZCK LD3● + ZCK D06



Body fixings



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

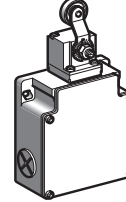
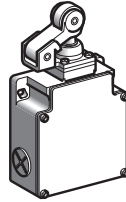
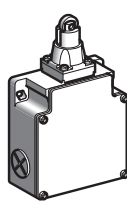
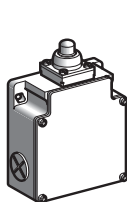
Limit switches

Osiriswitch® Classic

Metal, 2 x 2-pole contacts, type XCK ML

Complete switches with 3 ISO M20 x 1.5 or Pg 13 cable entries

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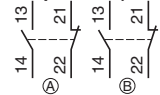


Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever (1)
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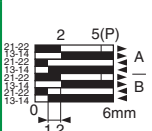
References (2)

Switches with 3 entries tapped ISO M20 x 1.5

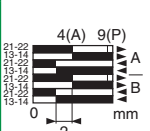
2 x 2-pole N/C + N/O snap action (XES P2151L)



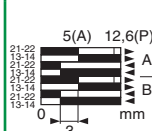
XCK ML110H29 →



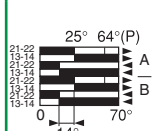
XCK ML102H29 →



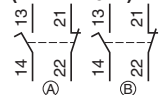
XCK ML121H29 →



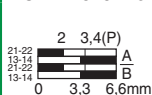
XCK ML115H29 →



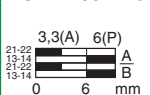
2 x 2-pole N/C + N/O break before make, slow break (XEN P2151L)



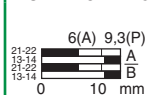
XCK ML510H29 →



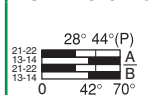
XCK ML502H29 →



XCK ML521H29 →

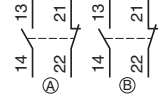


XCK ML515H29 →

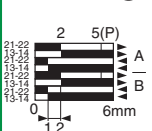


Switches with 3 entries tapped for Pg 13 cable gland

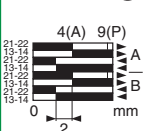
2 x 2-pole N/C + N/O snap action (XES P2151L)



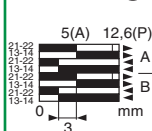
XCK ML110 →



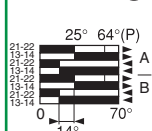
XCK ML102 →



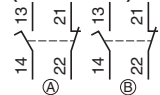
XCK ML121 →



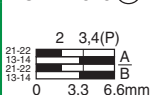
XCK ML115 →



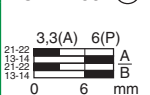
2 x 2-pole N/C + N/O break before make, slow break (XEN P2151L)



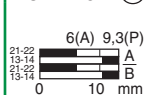
XCK ML510 →



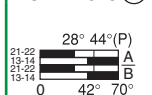
XCK ML502 →



XCK ML521 →



XCK ML515 →



Weight (kg)	0.400	0.405	0.450	0.430
Contact operation	contact closed contact open	(A) = cam displacement (P) = positive opening point	→ N/C 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 For positive opening	15 N 60 N	12 N 50 N	8 N 50 N
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: N/O + N/C make before break, N/C + N/C simultaneous (with positive opening operation), N/C + N/C simultaneous, please consult your Regional Sales Office.

Note: replacement parts

The heads of limit switches type XCK ML are the same as those for types XCK M and XCK L (see heads ZCK D10, ZCK D02, ZCK D21 and ZCK D15 on page 5/76).

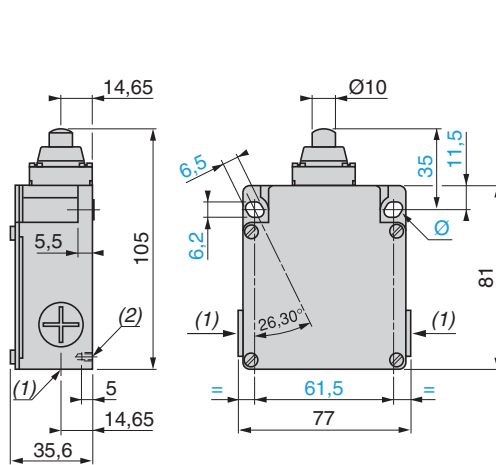
Limit switches

Osiswitch® Classic

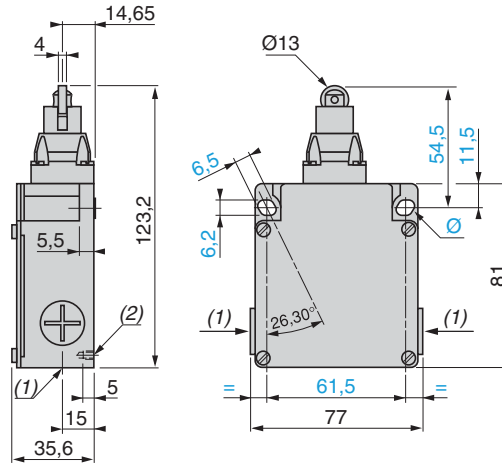
Metal, 2 x 2-pole contacts, type XCK ML

Complete switches with 3 ISO M20 x 1.5 or Pg 13 cable entries

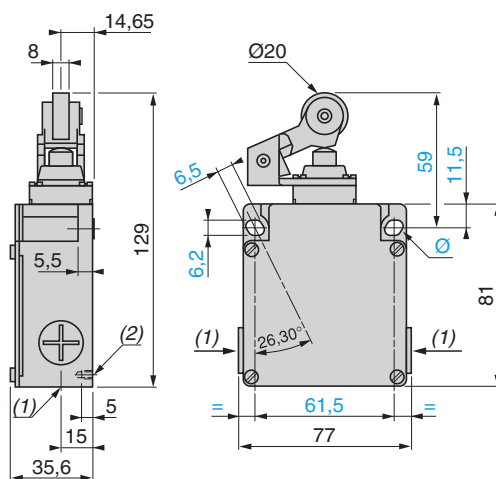
XCK ML110H29, XCK ML510H29, XCK ML110, XCK ML510



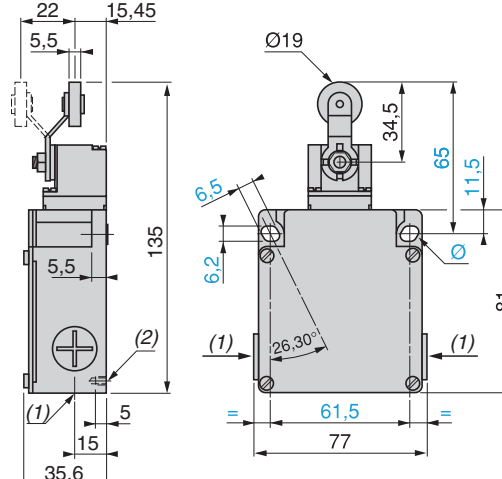
XCK ML102H29, XCK ML502H29, XCK ML102, XCK ML502



XCK ML121H29, XCK ML521H29, XCK ML121, XCK ML521



XCK ML115H29, XCK ML515H29, XCK ML115, XCK ML515



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

(2) 2 centering holes $\varnothing 3.9 \pm 0.2$, cover fixing holes axis.

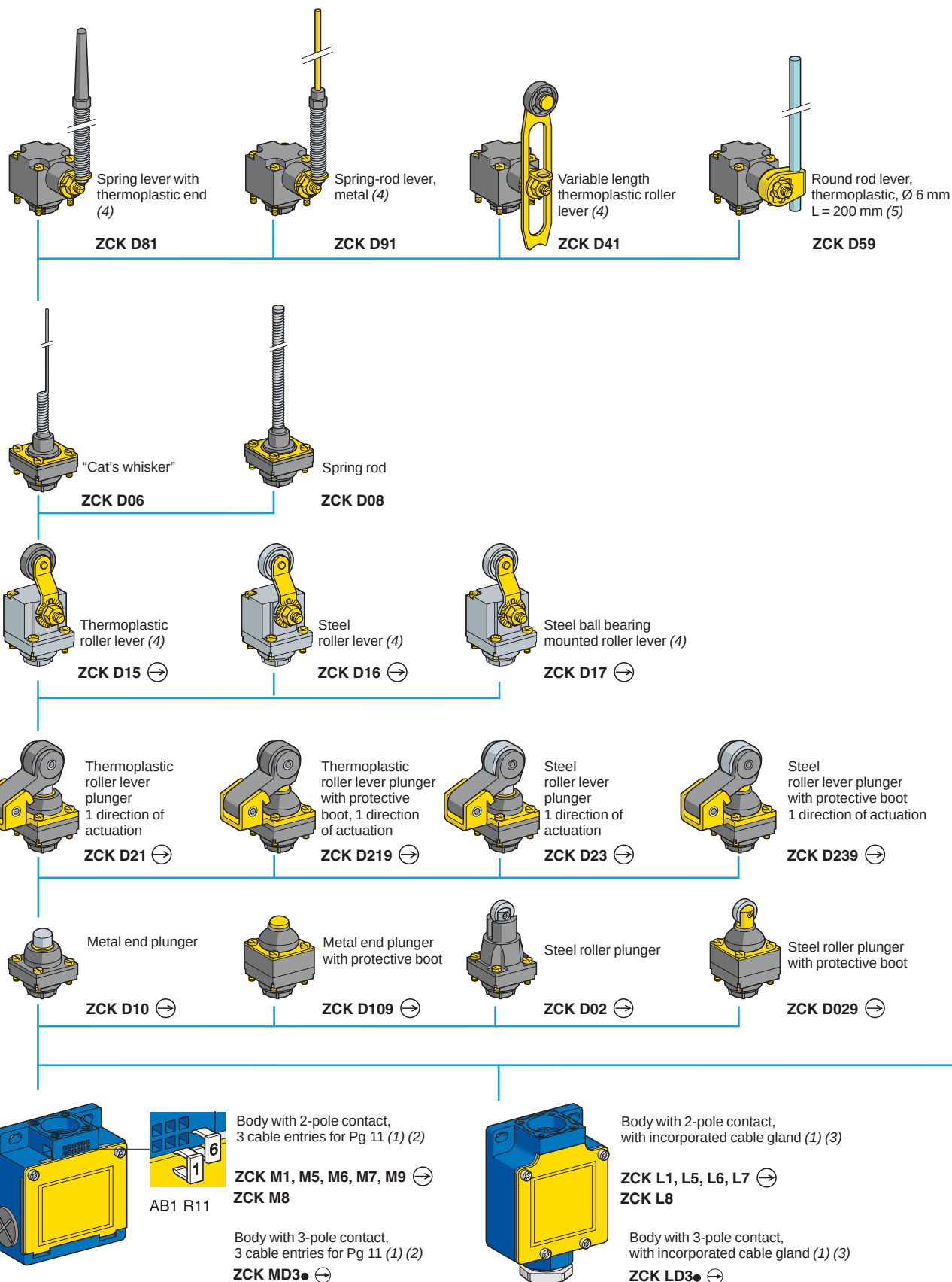
$\varnothing$: 2 elongated holes 6.2 x 6.5, inclined at 26°30' to the vertical axis, for M5 screws.

Limit switches

Osiswitch® Classic

Metal, types XCK M and XCK L

Variable composition



(1) For further details, see page 5/78.

(2) For 3 cable entries tapped ISO M20 x 1.5, add **H29** to the reference. Example: ZCK M1 becomes **ZCK M1H29**.

For one cable entry with 1/2" NPT adaptor, add **H7** to the reference. Example: ZCK M1 becomes **ZCK M1H7**.

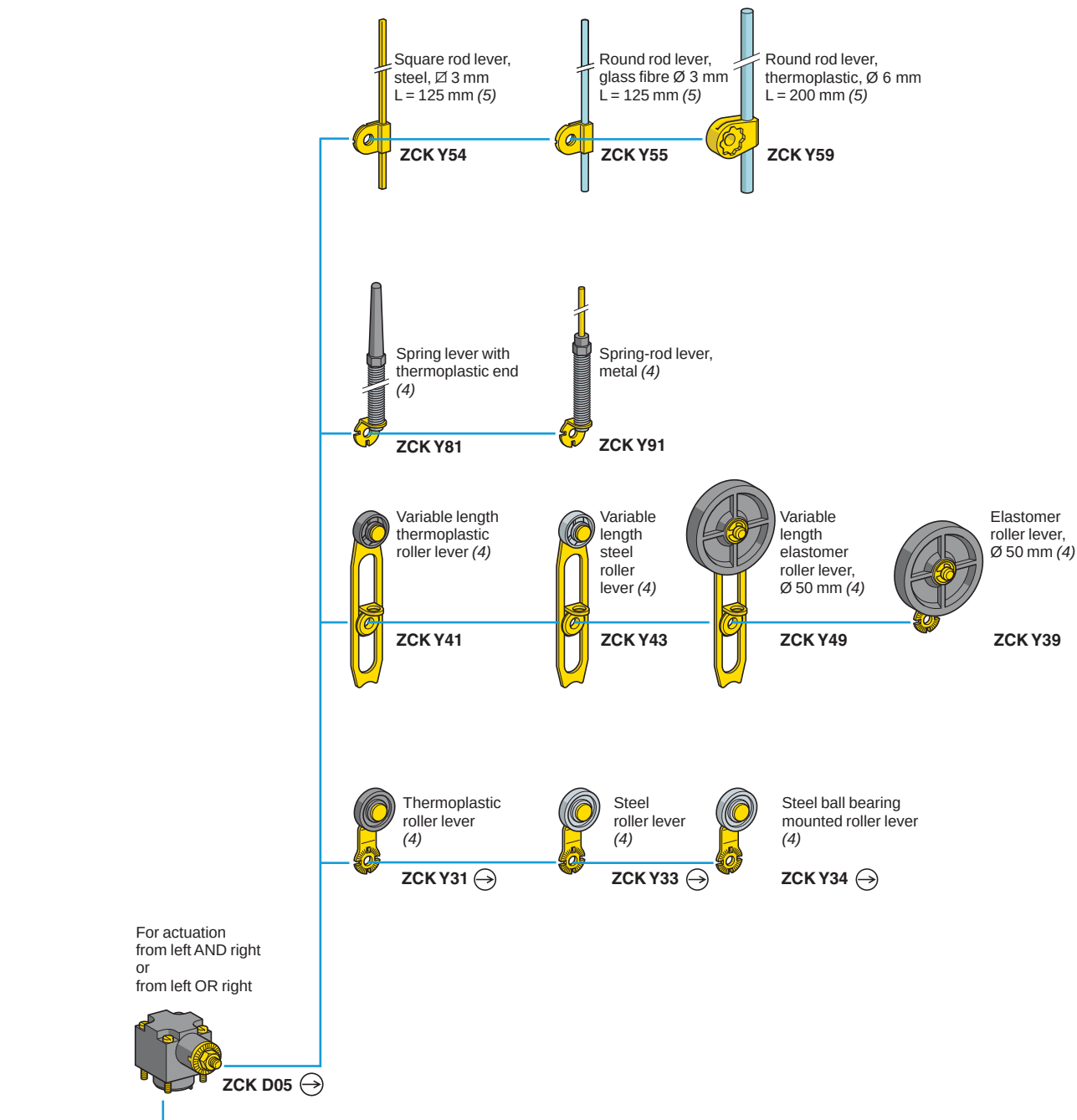
(3) For one cable entry tapped 1/2" NPT, add **H7** to the reference. Example: ZCK L1 becomes **ZCK L1H7**.

Limit switches

Osiswitch® Classic

Metal, types XCK M and XCK L

Variable composition



⊙: head assuring positive opening operation.

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

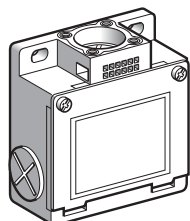
(5) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.

Limit switches

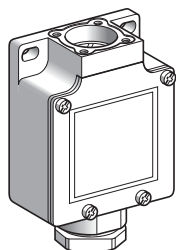
Osiswitch® Classic

Metal, types XCK M and XCK L

Adaptable sub-assemblies



ZCK M●



ZCK L●

Bodies with 2-pole contact

With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
For limit switches type XCK M					
N/C + N/O snap action (XE2S P2151)		⊙	Pg 11 ISO M20 x 1.5 1/2" NPT (2)	ZCK M1 ZCK M1H29 ZCK M1H7	0.210 0.210 0.210
N/C + N/O break before make, slow break (XE2N P2151)		⊙	Pg 11 ISO M20 x 1.5 1/2" NPT (2)	ZCK M5 ZCK M5H29 ZCK M5H7	0.210 0.210 0.210
N/O + N/C make before make, slow break (XE2N P2161)		⊙	Pg 11 ISO M20 x 1.5 1/2" NPT (2)	ZCK M6 ZCK M6H29 ZCK M6H7	0.210 0.210 0.210
N/C + N/C simultaneous, slow break (XE2N P2141)		⊙	Pg 11 ISO M20 x 1.5 1/2" NPT (2)	ZCK M7 ZCK M7H29 ZCK M7H7	0.210 0.210 0.210
N/O + N/O simultaneous, slow break (XE2N P2131)		—	Pg 11 ISO M20 x 1.5 1/2" NPT (2)	ZCK M8 ZCK M8H29 ZCK M8H7	0.210 0.210 0.210
N/C + N/C snap action (XE2S P2141)		⊙	Pg 11 ISO M20 x 1.5	ZCK M9 ZCK M9H29	0.210 0.210
For limit switches type XCK L					
N/C + N/O snap action (XE2S P2151)		⊙	Pg 11 1/2" NPT	ZCK L1 ZCK L1H7	0.210 0.210
N/C + N/O break before make, slow break (XE2N P2151)		⊙	Pg 11 1/2" NPT	ZCK L5 ZCK L5H7	0.210 0.210
N/O + N/C make before make, slow break (XE2N P2161)		⊙	Pg 11 1/2" NPT	ZCK L6 ZCK L6H7	0.210 0.210
N/C + N/C simultaneous, slow break (XE2N P2141)		⊙	Pg 11 1/2" NPT	ZCK L7 ZCK L7H7	0.210 0.210
N/O + N/O simultaneous, slow break (XE2N P2131)		—	Pg 11 1/2" NPT	ZCK L8 ZCK L8H7	0.210 0.210

(1) ⊙: N/C contact with positive opening operation.

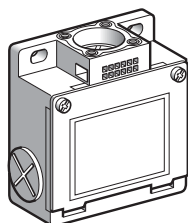
(2) 3 tapped entries, one with metal adaptor for 1/2" NPT (USASB2-1) conduit.

Limit switches

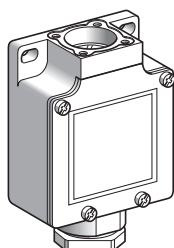
Osiswitch® Classic

Metal, types XCK M and XCK L

Adaptable sub-assemblies



ZCK MD3●



ZCK LD3●

Bodies with 3-pole contact					
With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
For limit switches type XCK M					
N/C + N/O + N/O snap action (XE3S P2151)			Pg 13	ZCK MD31	0.210
			ISO M20 x 1.5	ZCK MD31H29	0.210
			1/2" NPT (2)	ZCK MD31H7	0.210
N/C + N/C + N/O snap action (XE3S P2141)			Pg 13	ZCK MD39	0.210
			ISO M20 x 1.5	ZCK MD39H29	0.210
			1/2" NPT (2)	ZCK MD39H7	0.210
N/C + N/C + N/O break before make, slow break (XE3N P2141)			Pg 13	ZCK MD37	0.210
			ISO M20 x 1.5	ZCK MD37H29	0.210
			1/2" NPT (2)	ZCK MD37H7	0.210
N/C + N/O + N/O break before make, slow break (XE3N P2151)			Pg 13	ZCK MD35	0.210
			ISO M20 x 1.5	ZCK MD35H29	0.210
			1/2" NPT (2)	ZCK MD35H7	0.210
For limit switches type XCK L					
N/C + N/O + N/O snap action (XE3S P2151)			Pg 11	ZCK LD31	0.210
			1/2" NPT	ZCK LD31H7	0.210
N/C + N/C + N/O snap action (XE3S P2141)			Pg 11	ZCK LD39	0.210
			1/2" NPT	ZCK LD39H7	0.210
N/C + N/C + N/O break before make, slow break (XE3N P2141)			Pg 11	ZCK LD37	0.210
			1/2" NPT	ZCK LD37H7	0.210
N/C + N/O + N/O break before make, slow break (XE3N P2151)			Pg 11	ZCK LD35	0.210
			1/2" NPT	ZCK LD35H7	0.210

(1) : N/C contact with positive opening operation.

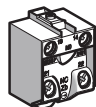
(2) 3 tapped entries, one with metal adaptor for 1/2" NPT (USASB2-1) conduit.

Limit switches

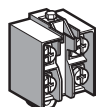
Osiswitch® Classic

Metal, types XCK M and XCK L

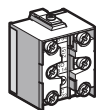
Adaptable sub-assemblies



XE2S P21●1



XE2N P21●1



XE3● P21●●

Contact blocks

Type of contact	Scheme	For bodies	Positive operation (1)	Reference	Weight kg
2-pole contact					
N/C + N/O snap action		ZCK M1 ZCK L1	⊙	XE2S P2151	0.020
N/C + N/O break before make, slow break		ZCK M5 ZCK L5	⊙	XE2N P2151	0.020
N/O + N/C make before break, slow break		ZCK M6 ZCK L6	⊙	XE2N P2161	0.020
N/C + N/C simultaneous, slow break		ZCK M7 ZCK L7	⊙	XE2N P2141	0.020
N/O + N/O simultaneous, slow break		ZCK M8 ZCK L8	—	XE2N P2131	0.020
N/C + N/C snap action		ZCK M9	⊙	XE2S P2141	0.020
3-pole contact					
N/C + N/O + N/O snap action		ZCK MD31 ZCK LD31	⊙	XE3S P2151	0.035
N/C + N/C + N/O snap action		ZCK MD39 ZCK LD39	⊙	XE3S P2141	0.035
N/C + N/C + N/O break before make, slow break		ZCK MD37 ZCK LD37	⊙	XE3N P2141	0.035
N/C + N/O + N/O break before make, slow break		ZCK MD35 ZCK LD35	⊙	XE3N P2151	0.035

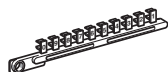
(1) ⊙: N/C contact with positive opening operation or sub-assembly assuring positive opening operation.

Accessories for limit switches type XCK M

Description	Sold in lots of	Unit reference	Weight kg
Tap-off terminal for cabling continuity	1	XCK Z09	0.010
Clip-in markers (strips of 10 numbers: 0 to 9)	25	AB1 R11	0.002
Other markers, please consult your Regional Sales Office.			



XCK Z09



AB1 R11

Other versions

Gold flashed contacts.
Please consult your Regional Sales Office.

Limit switches

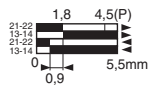
Osiriswitch® Classic

Metal, types XCK M and XCK L

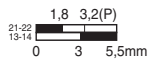
Adaptable sub-assemblies

Heads ZCK D10, D109 with body

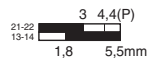
ZCK M1, L1



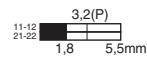
ZCK M5, L5



ZCK M6, L6



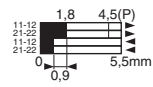
ZCK M7, L7



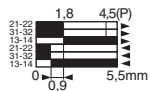
ZCK M8, L8



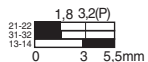
ZCK M9



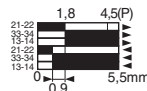
ZCK MD39, LD39



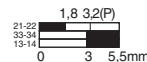
ZCK MD37, LD37



ZCK MD31, LD31

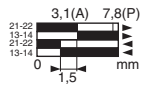


ZCK MD35, LD35

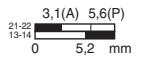


Heads ZCK D02, D029 with body

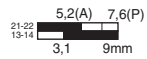
ZCK M1, L1



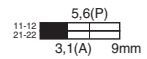
ZCK M5, L5



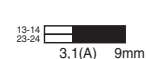
ZCK M6, L6



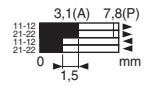
ZCK M7, L7



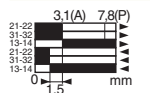
ZCK M8, L8



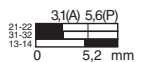
ZCK M9



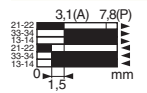
ZCK MD39, LD39



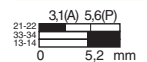
ZCK MD37, LD37



ZCK MD31, LD31

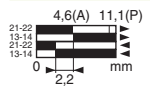


ZCK MD35, LD35

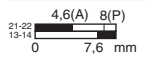


Heads ZCK D21, D23, D219, D239 with body

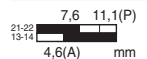
ZCK M1, L1



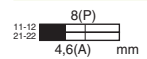
ZCK M5, L5



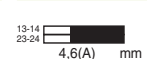
ZCK M6, L6



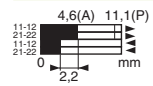
ZCK M7, L7



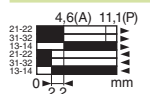
ZCK M8, L8



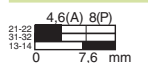
ZCK M9



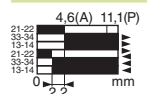
ZCK MD39, LD39



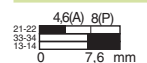
ZCK MD37, LD37



ZCK MD31, LD31

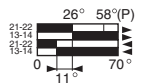


ZCK MD35, LD35

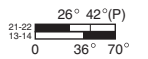


Heads ZCK D15, D16, D17 with body

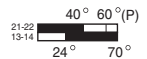
ZCK M1, L1



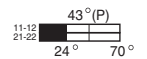
ZCK M5, L5



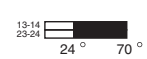
ZCK M6, L6



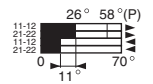
ZCK M7, L7



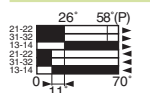
ZCK M8, L8



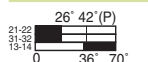
ZCK M9



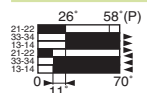
ZCK MD39, LD39



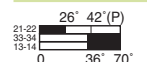
ZCK MD37, LD37



ZCK MD31, LD31

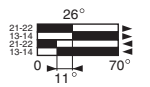


ZCK MD35, LD35

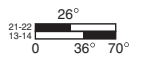


Heads ZCK D41, D59, D81, D91 with body

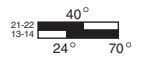
ZCK M1, L1



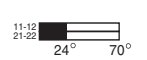
ZCK M5, L5



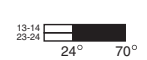
ZCK M6, L6



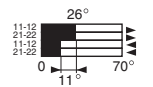
ZCK M7, L7



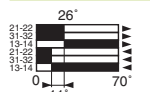
ZCK M8, L8



ZCK M9



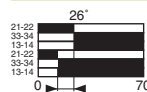
ZCK MD39, LD39



ZCK MD37, LD37



ZCK MD31, LD31

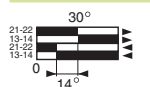


ZCK MD35, LD35

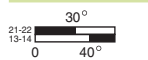


Heads ZCK D06, D08 with body

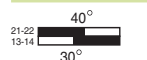
ZCK M1, L1



ZCK M5, L5



ZCK M6, L6



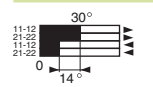
ZCK M7, L7



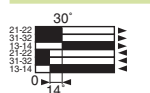
ZCK M8, L8



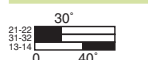
ZCK M9



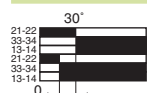
ZCK MD39, LD39



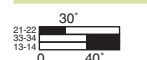
ZCK MD37, LD37



ZCK MD31, LD31



ZCK MD35, LD35



Contact operation

■ contact closed
□ contact open

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

Limit switches

Osiswitch® Classic

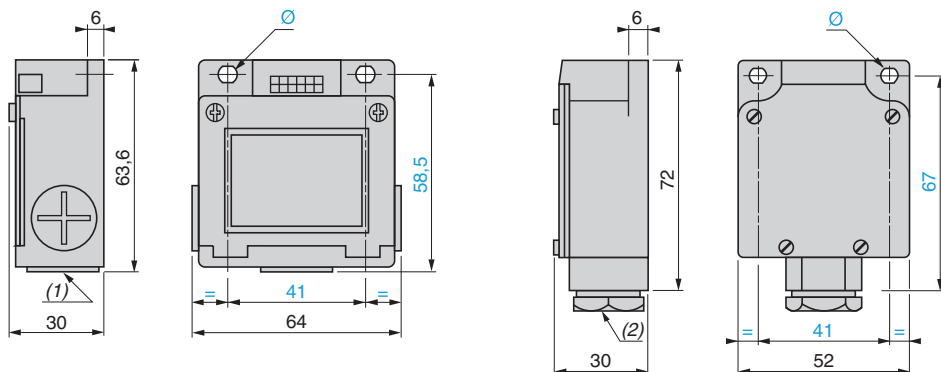
Metal, types XCK M and XCK L

Adaptable sub-assemblies

Bodies with contacts

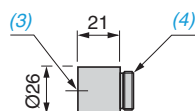
ZCK M1, M5, M6, M7, M8, M9, MD3●, MD3H●29, MD3●H7
ZCK M1H29, M5H29, M6H29, M7H29, M8H29, M9H29
ZCK M1H7, M5H7, M6H7, M7H7, M8H7

ZCK L1, L5, L6, L7, L8, LD3●
ZCK L1H7, L5H7, L6H7, L7H7, L8H7, LD3●H7



Adaptor for 1/2" NPT conduit

DE9 RA1012



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

(2) Incorporated cable gland.

Ø: 2 elongated holes Ø 5.2 x 6.2.

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

(4) Threaded sleeve.

Limit switches

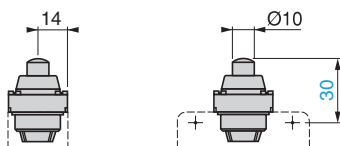
Osiswitch® Classic

Metal, types XCK M and XCK L

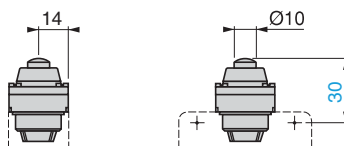
Adaptable sub-assemblies

Plunger heads

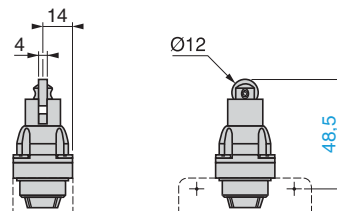
ZCK D10



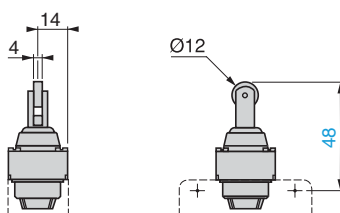
ZCK D109



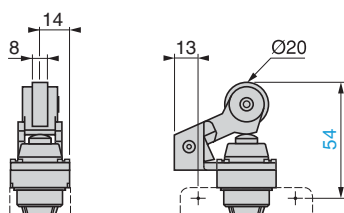
ZCK D02



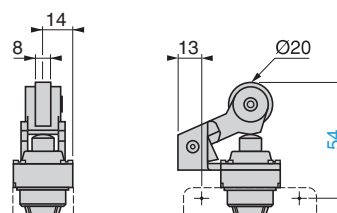
ZCK D029



ZCK D21, D23

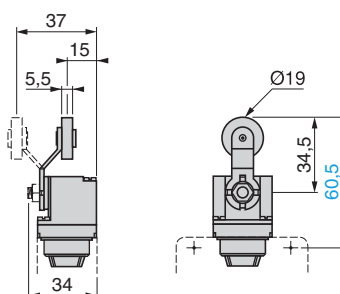


ZCK D219, D239

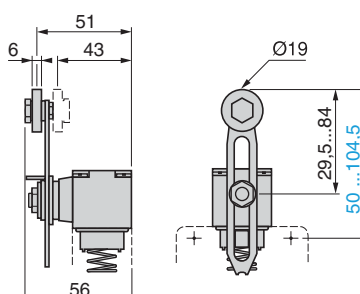


Rotary heads

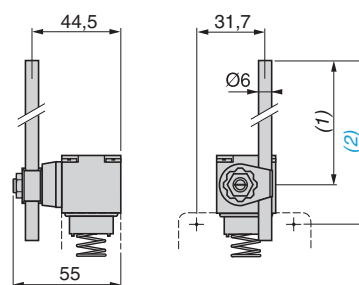
ZCK D15, D16, D17



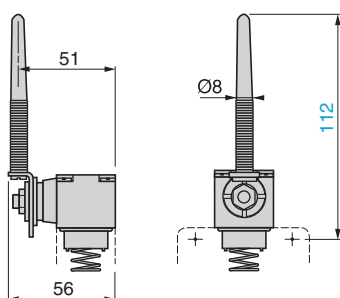
ZCK D41



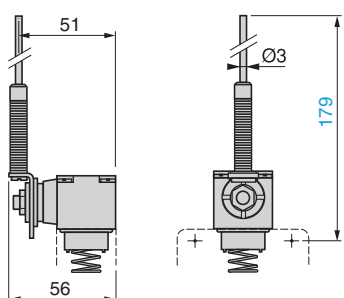
ZCK D59



ZCK D81

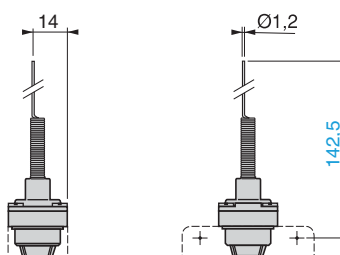


ZCK D91

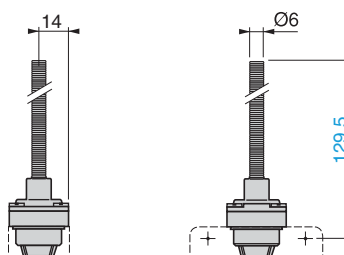


Multi-directional heads

ZCK D06



ZCK D08



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

Note: operating lever spindle threaded M6.

Limit switches

Osiswitch® Classic

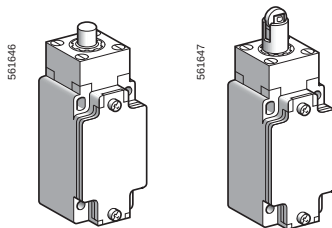
Metal, type XCK J

Conforming to CENELEC EN 50041

■ XCK J

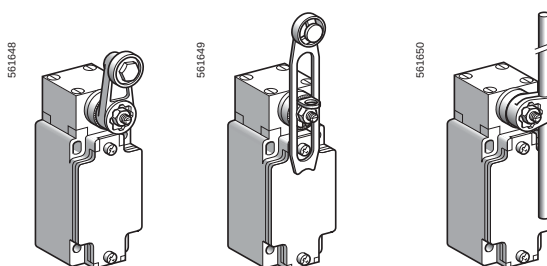
fixed body with 1 cable entry

□ With head for linear movement (plunger)



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

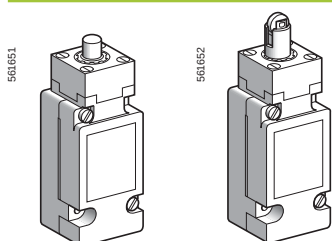


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■ XCK J

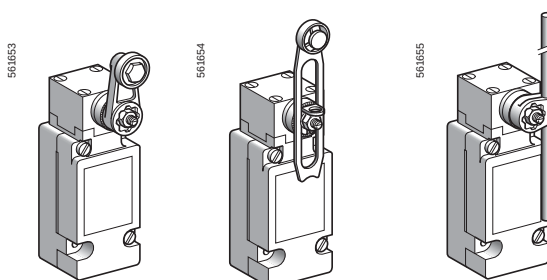
plug-in body with 1 cable entry

□ With head for linear movement (plunger)



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□ With head for rotary movement (lever)



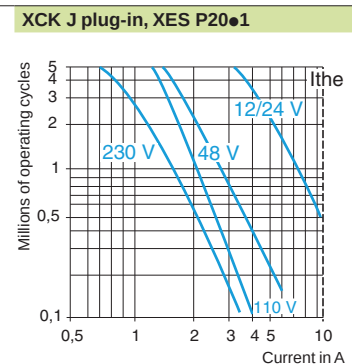
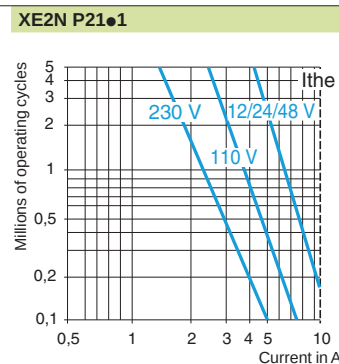
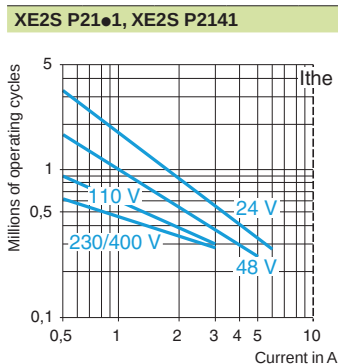
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Environment characteristics

Conforming 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", special "TH"
Ambient air temperature	Operation	- 25...+ 70 °C, special sub-assemblies available for extreme temperatures (-40 °C or +120 °C)
	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 50 102
Repeat accuracy		0.01 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry or integral connector	Depending on model	Tapped entry for n° 13 cable gland, or tapped ISO M20 x 1.5 or 1/2" NPT, or M12 connector
Materials		Bodies and heads in zamak

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)		N/C 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)
Cabling (screw clamp terminals)	XE2S P21●1	Clamping capacity, min: 1 x 0.34 mm², max: 2 x 1.5 mm²
	XE2N P21●1	Clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm²
	XCK J plug-in and XES P20●1	Clamping capacity, min: 1 x 0.75 mm², max: 2 x 1.5 mm²
	XE3N P and XE3S P	Clamping capacity, min: 1 x 0.34 mm², max: 1 x 1 mm² or 2 x 0.75 mm²
Minimum actuation speed		XE2S P21●1 and XE3S P: 0.01 m/minute XE2N P21●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

a.c. supply
~ 50/60 Hz
~ inductive circuit



d.c. supply ---

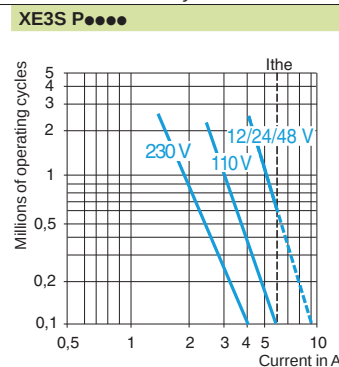
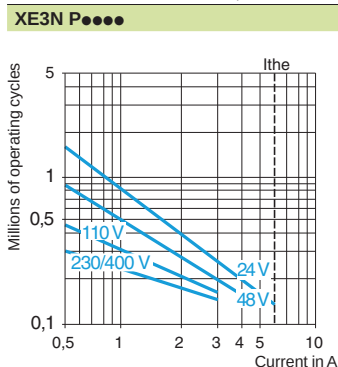
Power broken in W for 5 million operating cycles.				
Voltage V	24	48	120	
mm W	10	7	4	

Power broken in W for 5 million operating cycles.				
Voltage V	24	48	120	
mm W	13	9	7	

Power broken in W for 5 million operating cycles.				
Voltage V	24	48	120	
mm W	10	7	4	

For XE2S P●151 on ~ or ---, N/C and N/O contacts simultaneously loaded to the values shown with reverse polarity.

a.c. supply
~ 50/60 Hz
~ inductive circuit



d.c. supply ---

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

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

Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Complete switches, fixed body

1 ISO M20 x 1.5 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 (4)	Steel roller lever (4)	Variable length thermoplastic roller lever (4)	Round thermoplastic rod lever, Ø 6 mm (4) (5)

References (2) (3)						
	2-pole N/C + N/O snap action (XE2S P2151)	XCK J161H29	XCK J167H29	XCK J10511H29	XCK J10513H29	XCK J10541H29
	2-pole N/C + N/O break before make, slow break (XE2N P2151)	XCK J561H29	XCK J567H29	XCK J50511H29	XCK J50513H29	XCK J50541H29
	2-pole N/C + N/C snap action (XE2S P2141)	ZCK J9H29 + ZCK E61	ZCK J9H29 + ZCK E67	ZCK J9H29 + ZCK E05 + ZCK Y11	ZCK J9H29 + ZCK E05 + ZCK Y13	ZCK J9H29 + ZCK E05 + ZCK Y41
	2-pole N/C + N/C simultaneous, slow break (XE2N P2141)	ZCK J7H29 + ZCK E61	ZCK J7H29 + ZCK E67	ZCK J7H29 + ZCK E05 + ZCK Y11	ZCK J7H29 + ZCK E05 + ZCK Y13	ZCK J7H29 + ZCK E05 + ZCK Y41
	3-pole N/C + N/C + N/O snap action (XE3S P2141)	ZCK JD39H29 + ZCK E61	ZCK JD39H29 + ZCK E67	ZCK JD39H29 + ZCK E05 + ZCK Y11	ZCK JD39H29 + ZCK E05 + ZCK Y13	ZCK JD39H29 + ZCK E05 + ZCK Y41
	3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)	ZCK JD37H29 + ZCK E61	ZCK JD37H29 + ZCK E67	ZCK JD37H29 + ZCK E05 + ZCK Y11	ZCK JD37H29 + ZCK E05 + ZCK Y13	ZCK JD37H29 + ZCK E05 + ZCK Y41
Weight (kg)		0.430	0.455	0.480	0.490	0.485
Contact operation	contact closed contact open	(A) = cam displacement (P) = positive opening point			N/C 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 (6) (in millions of operating cycles)	30	25	30	
Minimum force or torque	For tripping For positive opening	20 N 50 N	16 N 40 N	0.25 N.m 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) Form conforming to EN 50041, see page 5/199.

(2) Switches with gold contacts or eyelet type connections: please consult your Regional Sales Office.

(3) For an entry tapped for a Pg 13 cable gland, delete H29 from the end of the reference. Example: XCK J161H29 becomes XCK J161.

For an entry tapped for 1/2" NPT (USAS B2-1) conduit, replace H29 at the end of the reference by H7. Example: XCK J161H29 becomes XCK J161H7.

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

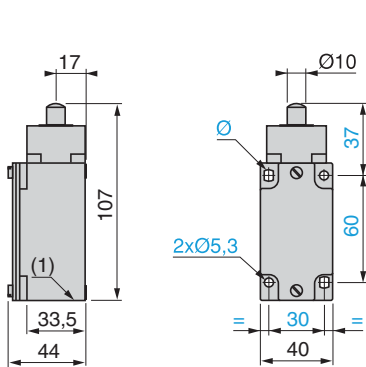
Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

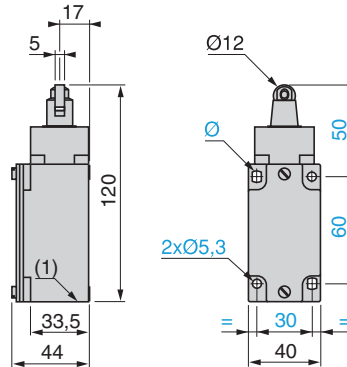
Complete switches, fixed body

1 ISO M20 x 1.5 cable entry

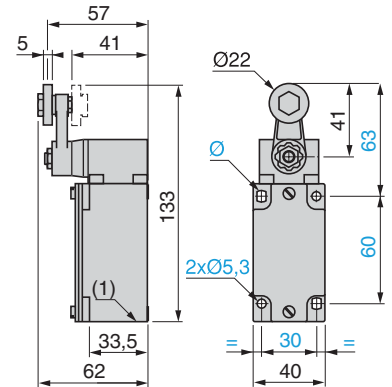
XCK J●61H29
ZCK J● + ZCK E61



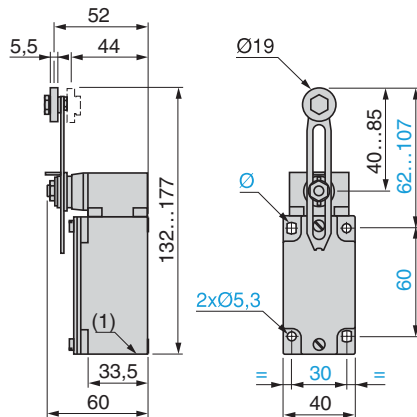
XCK J●67H29
ZCK J● + ZCK E67



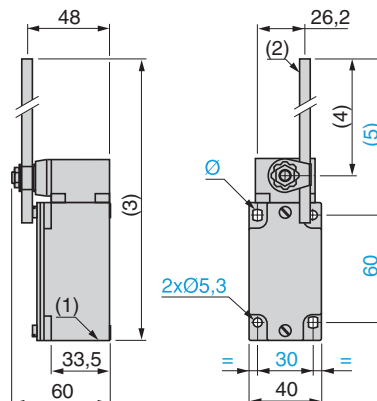
XCK J●051●H29
ZCK J● + ZCK E05 + ZCK Y11 or Y13



XCK J●0541H29
ZCK J● + ZCK E05 + ZCK Y41



XCK J●0559H29
ZCK J● + ZCK E05 + ZCK Y59



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13 cable gland or 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.

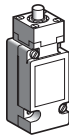
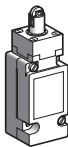
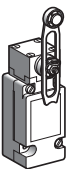
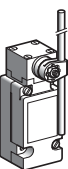
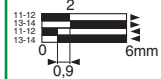
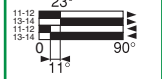
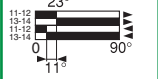
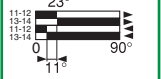
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Complete switches, plug-in body

ISO M20 x 1.5 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 (4)	Steel roller lever (4)	Variable length thermoplastic roller lever (4)	Round thermoplastic rod lever, Ø 6 mm (4) (5)
References (2) (3)						
 Single-pole C/O snap action	 XCK J1161H29	 XCK J1167H29	 XCK J110511H29	 XCK J110513H29	 XCK J110541H29	 XCK J110559H29
Weight (kg)	0.430	0.455	0.480	0.490	0.485	0.485
Contact operation	 contact closed  contact open (A) = cam displacement					
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			
Cable entry (3)	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 5/199.

(2) Switches with gold contacts: please consult your Regional Sales Office.

(3) For an entry tapped for a n° 13 cable gland, delete H29 from the end of the reference. Example: XCK J1161H29 becomes XCK J1161.

For an entry tapped for 1/2" NPT (USAS B2-1) conduit, replace H29 at the end of the reference by H7. Example: XCK J1161H29 becomes XCK J1161H7.

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

(5) Value taken with actuator operating at 100 mm from the fixing.

Limit switches

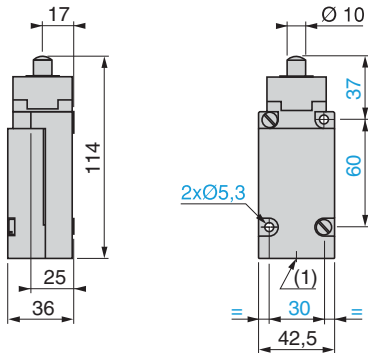
Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

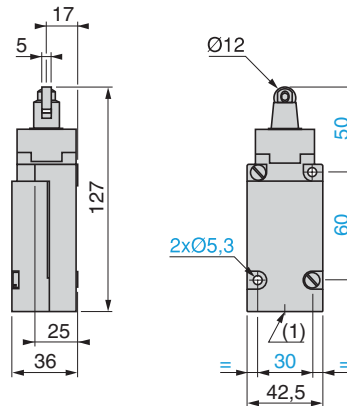
Complete switches, plug-in body

ISO M20 x 1.5 cable entry

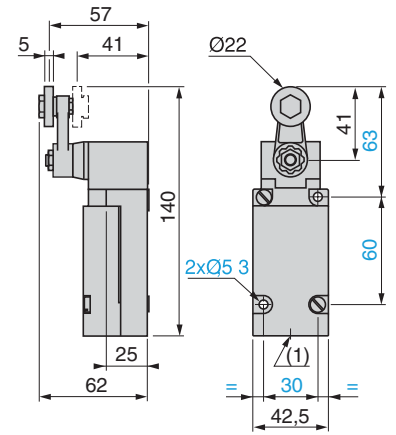
XCK J1611H29



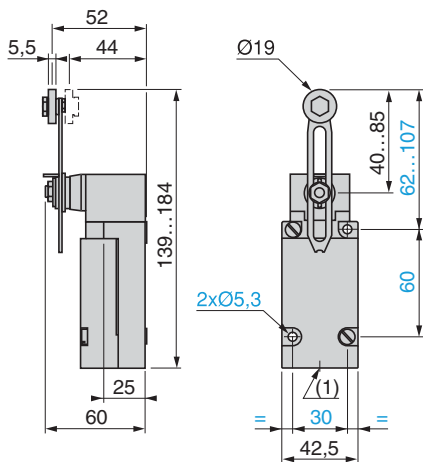
XCK J1167H29



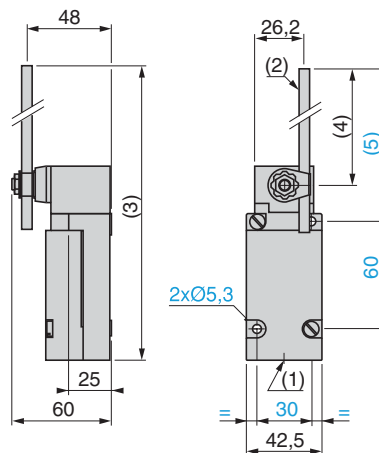
XCK J110511H29, XCK J110513H29



XCK J110541H29



XCK J110559H29



(1) Tapped entry for ISO M20 x 1.5 or Pg 13 cable gland or 1/2" NPT conduit.

(2) Ø 6 rod, length 200 mm.

(3) 289 max.

(4) 190 max.

(5) 212 max.

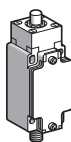
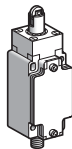
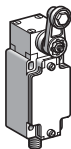
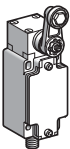
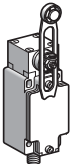
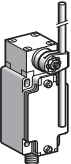
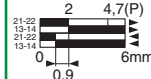
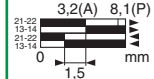
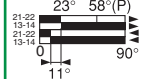
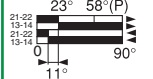
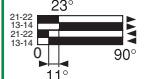
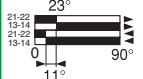
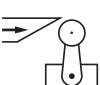
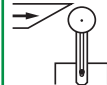
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Complete switches, fixed body

Integral 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 roller lever, Ø 6 mm (2) (3)
References (4)						
 2-pole N/C + N/O snap action (XE2S P2151)	XCK J161D  	XCK J167D  	XCK J10511D  	XCK J10513D  	XCK J10541D  	XCK J10559D  
	Weight (kg)	0.430	0.455	0.480	0.490	0.485
Contact operation	 contact closed  contact 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 5-pin connector, Ui = 60 V, Ie = 4 A (see suitable pre-wired female connectors below).					
(1) Form conforming to EN 50041, see page 5/199. (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 your Regional Sales Office.						
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	XZ CP1164L2			XZ CP1264L2	
	L = 5 m	XZ CP1164L5			XZ CP1264L5	
	L = 10 m	XZ CP1164L10			XZ CP1264L10	
Weight (kg)	L = 2 m	0.115				
	L = 5 m	0.270				
	L = 10 m	0.520				

Limit switches

Osiswitch® Classic

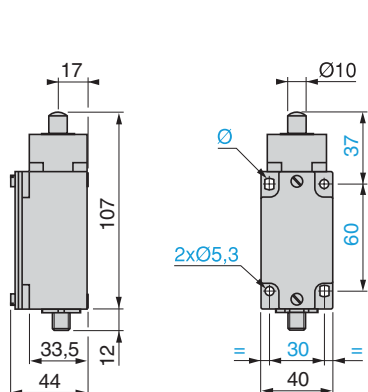
Metal, conforming to CENELEC EN 50041, type XCK J

Complete switches, fixed body

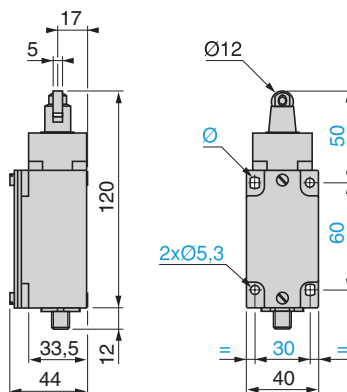
Integral M12 connector

Dimensions

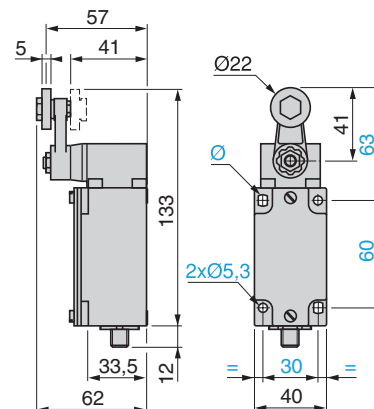
XCK J161D



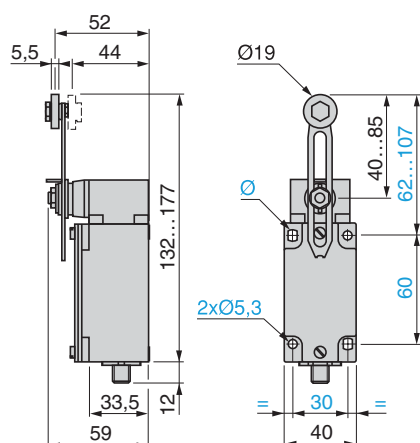
XCK J167D



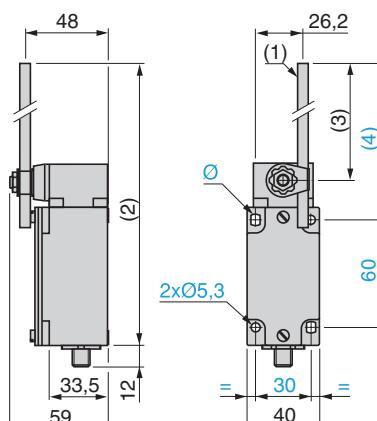
XCK J1051●D



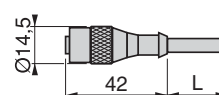
XCK J10541D



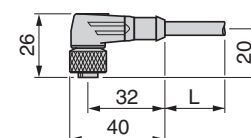
XCK J10559D



XZ CP1164L●



XZ CP1264L●



(1) Ø 6 rod, length 200 mm.

(2) 282 max.

(3) 190 max.

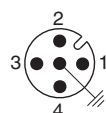
(4) 212 max.

Ø: 2 elongated holes Ø 5.3 x 7.3.

L: Cable length 2, 5 or 10 m.

Connections

Limit switch XCK J●●●●D



1-2 = N/C

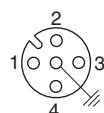
3-4 = N/O

5 = ⊥

4 A / 24 V max.



Pre-wired female connector XZ CP1●64L●



1 = brown

2 = white

3 = blue

4 = black

5 = ⊥ yellow/green

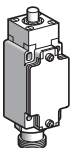
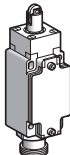
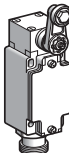
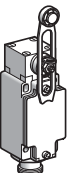
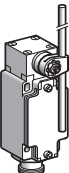
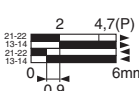
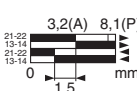
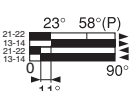
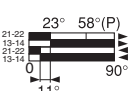
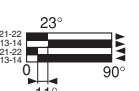
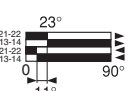
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Complete switches, fixed body

Integral 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 N/C + N/O snap action (XE2S P2151)	XCK J161A 	XCK J167A 	XCK J10511A 	XCK J10513A 	XCK J10541A 	XCK J10559A 
						
Weight (kg)	0.430	0.455	0.480	0.490	0.485	0.485
Contact operation	 contact closed  contact open		(A) = cam displacement (P) = positive opening point		 N/C 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 5-pin connector, Ui = 250 V; Ie = 6 A (see suitable pre-wired female connectors below).					
(1) Form conforming to EN 50041, see page 5/199. (2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting or clamp. (3) Value taken with actuator operating at 100 mm from the fixing. (4) Switches with gold contacts: please consult your Regional Sales Office.						
References of suitable pre-wired female connectors						
Type of connector	7/8" 16UN straight, 5-pin, 6 A/250 V max.					
With cable, Ø 6.7 mm (5 x 0.5 mm²)	L = 2 m	XZ CP1771L2				
	L = 5 m	XZ CP1771L5				
	L = 10 m	XZ CP1771L10				
Weight (kg)	L = 2 m	0.190				
	L = 5 m	0.475				
	L = 10 m	0.950				

Limit switches

Osiswitch® Classic

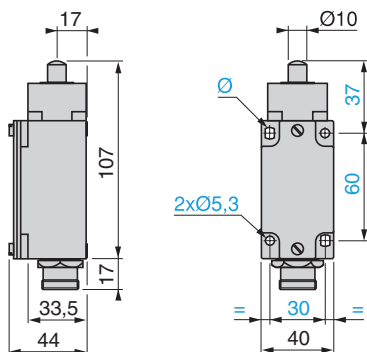
Metal, conforming to CENELEC EN 50041, type XCK J

Complete switches, fixed body

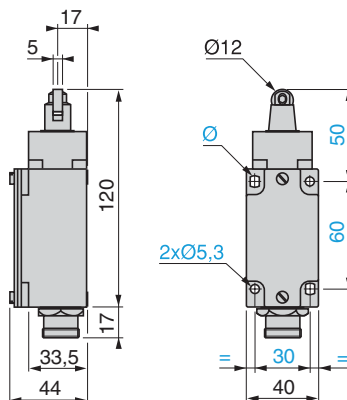
Integral 7/8" 16UN connector

Dimensions

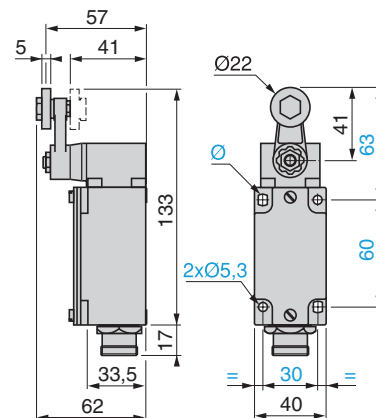
XCK J161A



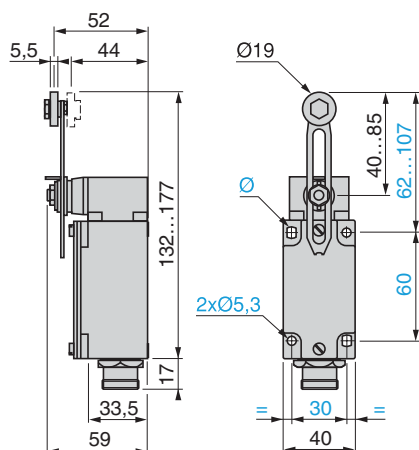
XCK J167A



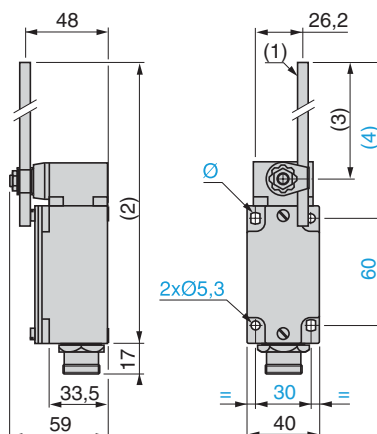
XCK J1051●A



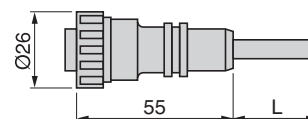
XCK J10541A



XCK J10559A



XZ CP1771L●



(1) Ø 6 rod, length 200 mm.

(2) 282 max.

(3) 190 max.

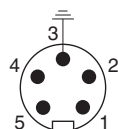
(4) 212 max.

Ø: 2 elongated holes Ø 5.3 x 7.3.

L: cable length 2, 5 or 10 m.

Connections

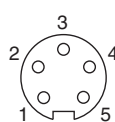
Limit switch XCK J●●●●A



1 = 21
2 = 22
3 = $\perp$
4 = 14
5 = 13



Pre-wired female connector XZ CP1771L●



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

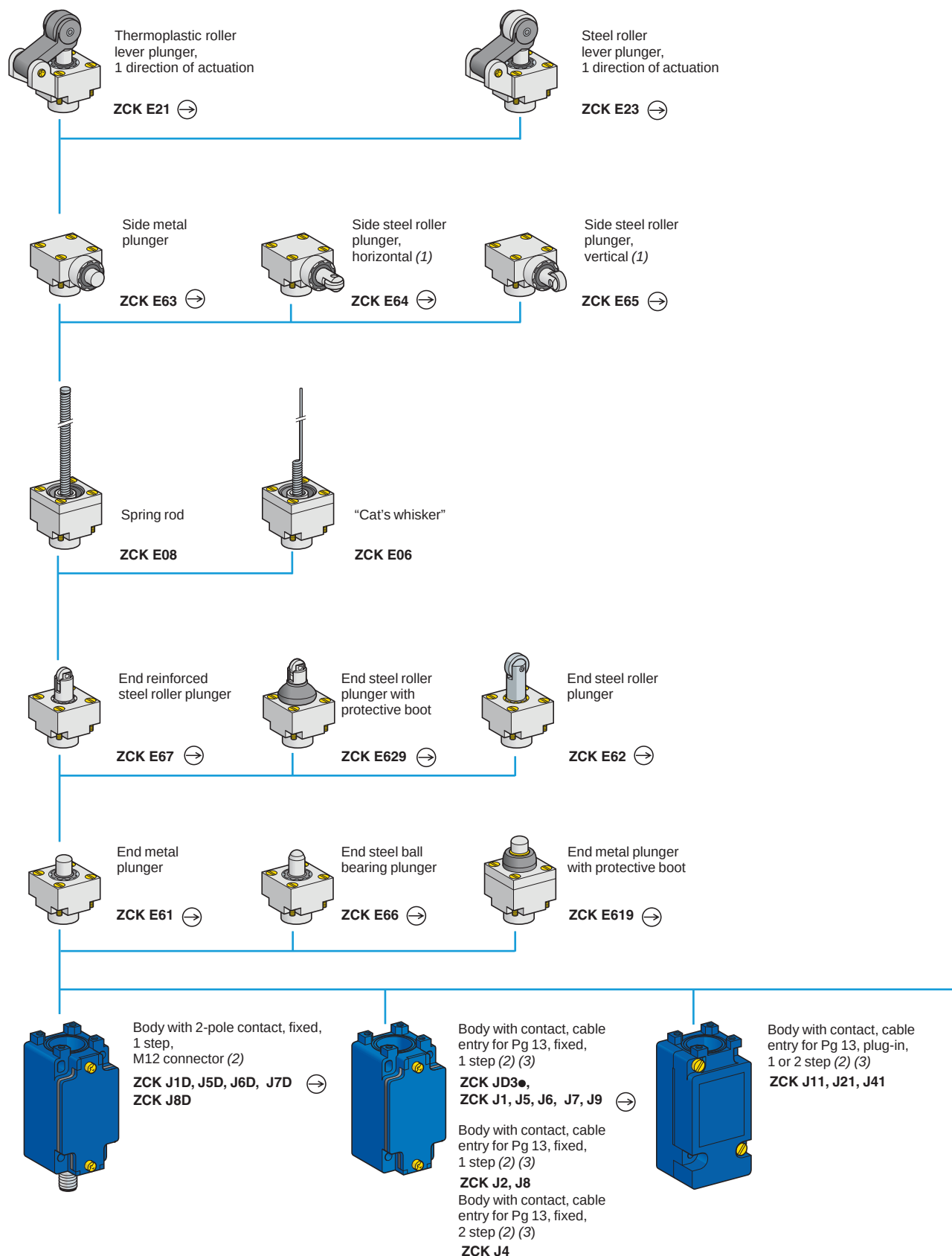
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

Variable composition: standard bodies



(1) Cannot be used with bodies ZCK J4 and ZCK J41.

(2) For further details, see page 5/96.

(3) For a cable entry tapped ISO M20 x 1.5, add **H29** to the reference. Example: ZCK J1 becomes **ZCK J1H29**.

For a cable entry tapped 1/2" NPT, add **H7** to the reference. Example: ZCK J1 becomes **ZCK J1H7**.

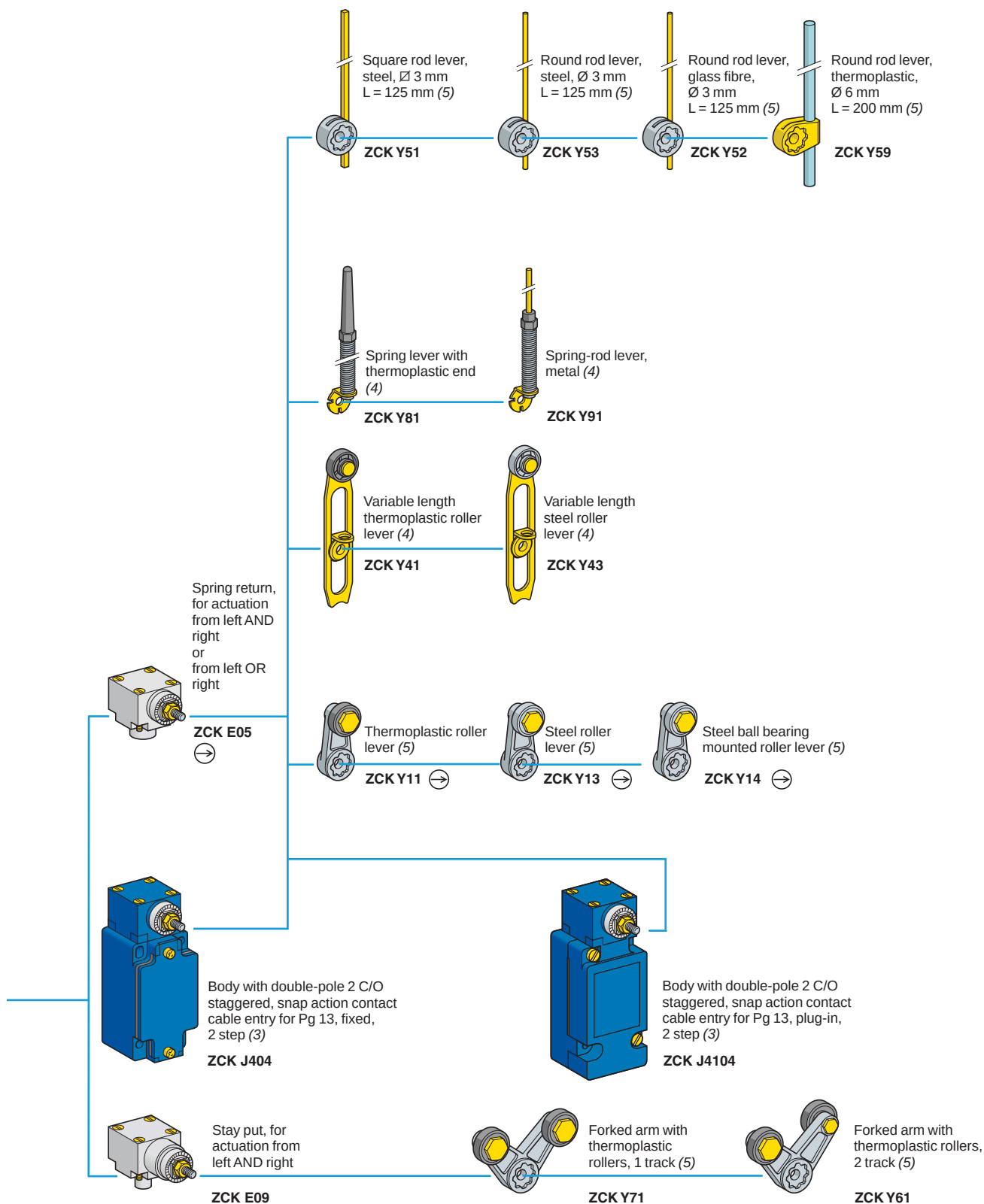
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

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.

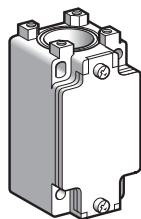
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

Adaptable sub-assemblies: standard bodies



ZCK J●

Fixed bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	N/C + N/O snap action (XE2S P2151)			Pg 13	ZCK J1	0.310
				ISO M20 x 1.5	ZCK J1H29	0.310
				1/2" NPT	ZCK J1H7	0.310
	2 C/O simultaneous, snap action (XES P2021)		-	Pg 13	ZCK J2	0.310
				ISO M20 x 1.5	ZCK J2H29	0.310
				1/2" NPT	ZCK J2H7	0.310
	N/C + N/O break before make, slow break (XE2N P2151)			Pg 13	ZCK J5	0.310
				ISO M20 x 1.5	ZCK J5H29	0.310
				1/2" NPT	ZCK J5H7	0.310
	N/C + N/O make before make, slow break (XE2N P2161)			Pg 13	ZCK J6	0.310
				ISO M20 x 1.5	ZCK J6H29	0.310
				1/2" NPT	ZCK J6H7	0.310
	N/C + N/C simultaneous, slow break (XE2N P2141)			Pg 13	ZCK J7	0.310
				ISO M20 x 1.5	ZCK J7H29	0.310
				1/2" NPT	ZCK J7H7	0.310
2 step	N/O + N/O simultaneous, slow break (XE2N P2131)		-	Pg 13	ZCK J8	0.310
				ISO M20 x 1.5	ZCK J8H29	0.310
				1/2" NPT	ZCK J8H7	0.310
	N/C + N/C snap action (XE2S P2141)			Pg 13	ZCK J9	0.310
				ISO M20 x 1.5	ZCK J9H29	0.310
				1/2" NPT	ZCK J9H7	0.310
	2 C/O staggered, snap action (XES P2031)		-	Pg 13	ZCK J4	0.310
				ISO M20 x 1.5	ZCK J4H29	0.310
				1/2" NPT	ZCK J4H7	0.310

Fixed bodies with 3-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
-	N/C + N/O + N/O snap action (XE3S P2151)			Pg 13	ZCK JD31	0.310
				ISO M20 x 1.5	ZCK JD31H29	0.310
				1/2" NPT	ZCK JD31H7	0.310
	N/C + N/C + N/O snap action (XE3S P2141)			Pg 13	ZCK JD39	0.310
				ISO M20 x 1.5	ZCK JD39H29	0.310
				1/2" NPT	ZCK JD39H7	0.310
	N/C + N/C + N/O break before make, slow break (XE3N P2141)			Pg 13	ZCK JD37	0.310
				ISO M20 x 1.5	ZCK JD37H29	0.310
				1/2" NPT	ZCK JD37H7	0.310
	N/C + N/O + N/O break before make, slow break (XE3N P2151)			Pg 13	ZCK JD35	0.310
				ISO M20 x 1.5	ZCK JD35H29	0.310
				1/2" NPT	ZCK JD35H7	0.310

(1) : N/C contact with positive opening operation.

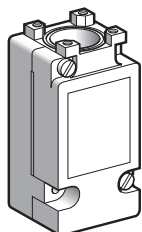
Limit switches

Osiswitch® Classic

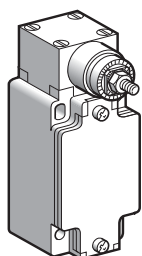
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

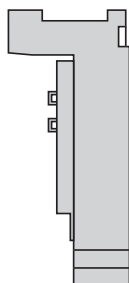
Adaptable sub-assemblies: standard bodies



ZCK J1



ZCK J404



ZCK J0

Plug-in bodies with contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	Single-pole C/O snap action		-	Pg 13	ZCK J11	0.300
				ISO M20 x 1.5	ZCK J11H29	0.300
				1/2" NPT	ZCK J11H7	0.300
	Double-pole 2 C/O simultaneous, snap action		-	Pg 13	ZCK J21	0.300
				ISO M20 x 1.5	ZCK J21H29	0.300
				1/2" NPT	ZCK J21H7	0.300
2 step	Double-pole 2 C/O staggered, snap action		-	Pg 13	ZCK J41	0.300
				ISO M20 x 1.5	ZCK J41H29	0.300
				1/2" NPT	ZCK J41H7	0.300

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

Double body 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 the left AND 1 from the right	Double-pole 2 C/O staggered, snap action		-	Pg 13	ZCK J404	0.455
				ISO M20 x 1.5	ZCK J404H29	0.455
				1/2" NPT	ZCK J404H7	0.455
Plug-in body						
2 step 1 from the left AND 1 from the right	Double-pole 2 C/O staggered, snap action		-	Pg 13	ZCK J4104	0.465
				ISO M20 x 1.5	ZCK J4104H29	0.465
				1/2" NPT	ZCK J4104H7	0.465

Plug-in housing only

Description	For use with	Contacts	Reference	Weight kg
Single-pole 1 C/O with positive opening operation	ZCK J11	Silver	ZCK J01	0.150
Double-pole 2 C/O simultaneous with positive opening operation	ZCK J21	Silver	ZCK J02	0.160
Double-pole 1 C/O + 1 C/O staggered	ZCK J41	Silver	ZCK J04	0.160

(1) : N/C contact with positive opening operation.

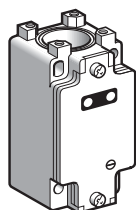
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

Adaptable sub-assemblies: bodies with indicator light module



ZCK J...

Fixed bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
With module comprising 1 LED, $\bar{\sim}$ 24 V						
1 step	N/C + N/O snap action (XE2S P2151)			Pg 13	ZCK J120	0.320
	N/C + N/O break before make, slow break (XE2N P2151)			Pg 13	ZCK J520	0.320
With module comprising 2 LEDs, $\bar{\sim}$ 24 V						
1 step	N/C + N/O snap action (XE2S P2151)			Pg 13 ISO M20 x 1.5	ZCK J121 ZCK J121H29	0.320 0.320
	N/C + N/O break before make, slow break (XE2N P2151)			Pg 13 ISO M20 x 1.5	ZCK J521 ZCK J521H29	0.320 0.320
With module comprising 2 neon indicator lights, $\sim$ 110/120 V						
1 step	N/C + N/O snap action (XE2S P2151)			Pg 13 ISO M20 x 1.5	ZCK J133 ZCK J133H29	0.320 0.320
	N/C + N/O break before make, slow break (XE2N P2151)			Pg 13 ISO M20 x 1.5	ZCK J533 ZCK J533H29	0.320 0.320
With module comprising 2 neon indicator lights, $\sim$ 220/240 V						
1 step	N/C + N/O snap action (XE2S P2151)			Pg 13 ISO M20 x 1.5	ZCK J134 ZCK J134H29	0.320 0.320
	N/C + N/O break before make, slow break (XE2N P2151)			Pg 13 ISO M20 x 1.5	ZCK J534 ZCK J534H29	0.320 0.320

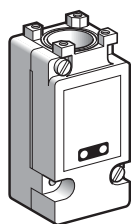
Plug-in bodies with single-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
With module comprising 2 LEDs, $\bar{\sim}$ 24 V						
1 step	C/O snap action		—	Pg 13 ISO M20 x 1.5	ZCK J1121 ZCK J1121H29	0.340 0.340
With module comprising 2 neon indicator lights, $\sim$ 110/120 V						
1 step	C/O snap action		—	Pg 13 ISO M20 x 1.5	ZCK J1133 ZCK J1133H29	0.340 0.340
With module comprising 2 neon indicator lights, $\sim$ 220/240 V						
1 step	C/O snap action		—	Pg 13 ISO M20 x 1.5	ZCK J1134 ZCK J1134H29	0.340 0.340

(1) : N/C contact with positive opening operation.

Indicator light module characteristics

Type of indicator	1 LED or 2 LEDs	2 neon lights
Rated insulation voltage	$\bar{\sim}$ 50 V, conforming to IEC 60947-1	$\sim$ 250 V, conforming to IEC 60947-1
Current consumption	7 mA per LED	2.5 mA per neon 5 mA per neon
Rated operational voltage	$\bar{\sim}$ 24 V	$\sim$ 110/120 V $\sim$ 220/240 V
Voltage limits	$\bar{\sim}$ 20...30 V (including ripple)	$\sim$ 95...130 V $\sim$ 190...260 V
Service life	100 000 hours	20 000 hours 20 000 hours
Reverse polarity protection	Yes	—



ZCK J1...

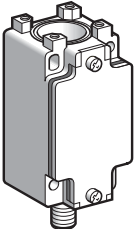
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

Adaptable sub-assemblies: bodies with M12 connector



ZCK J•D

Fixed bodies with 2-pole contact					
Type	With contact block	Scheme	Positive operation (1)	Reference	Weight kg
1 step	N/C + N/O snap action (XE2S P2151)			ZCK J1D	0.320
	N/C + N/O break before make, slow break (XE2N P2151)			ZCK J5D	0.320
	N/O + N/C make before make, slow break (XE2N P2161)			ZCK J6D	0.320
	N/C + N/C simultaneous, slow break (XE2N P2141)			ZCK J7D	0.320
	N/O + N/O simultaneous, slow break (XE2N P2131)		—	ZCK J8D	0.320

(1) N/C contact with positive opening operation.

Limit switches

Osiswitch® Classic

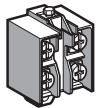
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

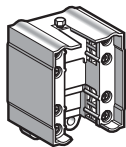
Adaptable sub-assemblies: contact blocks



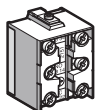
XE2S P21●1



XE2N P21●1



XE3 P20●1



XE3● P21●1

Contact blocks

Type of contact	Scheme	For bodies	Positive operation (1)	Reference	Weight kg
2-pole contact					
N/C + N/O snap action		ZCK J1 ZCK J1D	⊙	XE2S P2151	0.020
N/C + N/O break before make, slow break		ZCK J5 ZCK J5D	⊙	XE2N P2151	0.020
2 C/O simultaneous, snap action		ZCK J2	—	XES P2021	0.045
2 C/O staggered, snap action		ZCK J4	—	XES P2031	0.045
N/O + N/C make before break, slow break		ZCK J6 ZCK J6D	⊙	XE2N P2161	0.020
N/C + N/C simultaneous, slow break		ZCK J7 ZCK J7D	⊙	XE2N P2141	0.020
N/O + N/O simultaneous, slow break		ZCK J8 ZCK J8D	—	XE2N P2131	0.020
N/C + N/C snap action		ZCK J9	⊙	XE2S P2141	0.020
3-pole contact					
N/C + N/O + N/O snap action		ZCK JD31	⊙	XE3S P2151	0.035
N/C + N/C + N/O snap action		ZCK JD39	⊙	XE3S P2141	0.035
N/C + N/C + N/O break before make, slow break		ZCK JD37	⊙	XE3N P2141	0.035
N/C + N/O + N/O break before make, slow break		ZCK JD35	⊙	XE3N P2151	0.035

(1) ⊙ : N/C contact with positive opening operation.

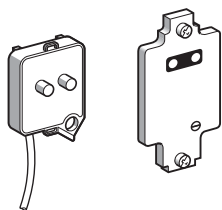
Limit switches

Osiswitch® Classic

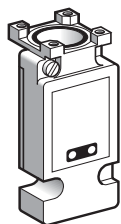
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

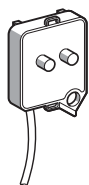
Adaptable sub-assemblies: add-ons



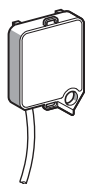
ZCK Z0●●



ZCK J01●●



ZCK J90●



ZCK J82A

Covers + indicator light module

For use with	Number and type of indicators	Voltage	Reference	Weight kg
Fixed body	1 LED	— 24 V	ZCK Z020	0.060
	2 LEDs	— 24 V	ZCK Z021	0.060
	2 neon lights	~ 110/120 V	ZCK Z033	0.060
		~ 220/240 V	ZCK Z034	0.060
Plug-in body	2 LEDs	— 24 V	ZCK J0121	0.200
	2 neon lights	~ 110/120 V	ZCK J0133	0.200
		~ 220/240 V	ZCK J0134	0.200

Indicator light modules

For use with	Number and type of indicators	Voltage	Reference	Weight kg
Fixed body	1 LED	— 24 V	ZCK J902	0.030
	2 LEDs	— 24 V	ZCK J906	0.030
	2 neon lights	~ 110/120 V	ZCK J903	0.030
		~ 220/240 V	ZCK J904	0.030

Module with resistor for machine diagnostics

For use with	Resistor value	Reference	Weight kg
Fixed body (ZCK J1 only)	15 kΩ, 1/4 Ω	ZCK J82A	0.030

Other versions

Covers + indicator light module for other supply voltages.
Please consult your Regional Sales Office.

Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

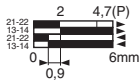
Fixed or plug-in body

Adaptable sub-assemblies

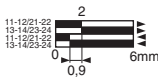
Function diagrams (positive operation assured only if the associated sub-assemblies are )

Heads ZCK E61, E619, E66 with body

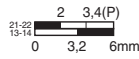
ZCK J1●



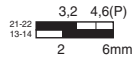
ZCK J2●



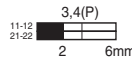
ZCK J5●



ZCK J6●



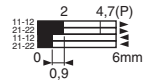
ZCK J7●



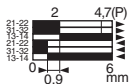
ZCK J8●



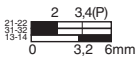
ZCK J9



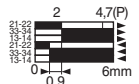
ZCK JD39



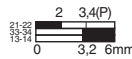
ZCK JD37



ZCK JD31

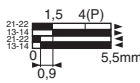


ZCK JD35

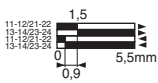


Head ZCK E63 with body

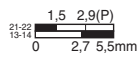
ZCK J1●



ZCK J2●



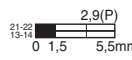
ZCK J5●



ZCK J6



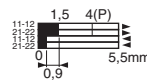
ZCK J7



ZCK J8



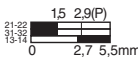
ZCK J9



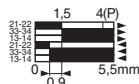
ZCK JD39



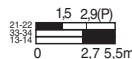
ZCK JD37



ZCK JD31

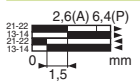


ZCK JD35

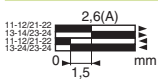


Heads ZCK E64, E65 with body

ZCK J1●



ZCK J2●



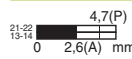
ZCK J5●



ZCK J6



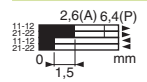
ZCK J7



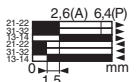
ZCK J8



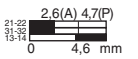
ZCK J9



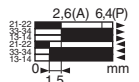
ZCK JD39



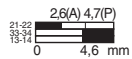
ZCK JD37



ZCK JD31

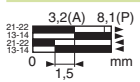


ZCK JD35

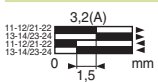


Heads ZCK E67, E629 with body

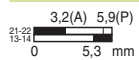
ZCK J1●



ZCK J2●



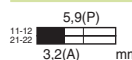
ZCK J5●



ZCK J6



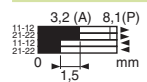
ZCK J7



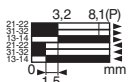
ZCK J8



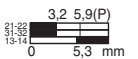
ZCK J9



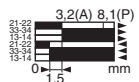
ZCK JD39



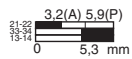
ZCK JD37



ZCK JD31

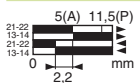


ZCK JD35

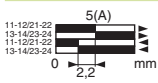


Heads ZCK E21, E23 with body

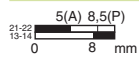
ZCK J1●



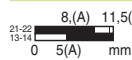
ZCK J2●



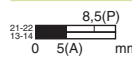
ZCK J5●



ZCK J6



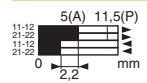
ZCK J7



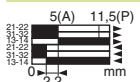
ZCK J8



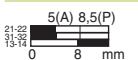
ZCK J9



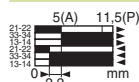
ZCK JD39



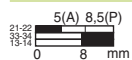
ZCK JD37



ZCK JD31

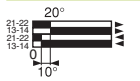


ZCK JD35

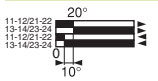


Heads ZCK E06, E08 with body

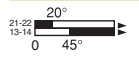
ZCK J1●



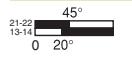
ZCK J2●



ZCK J5●



ZCK J6



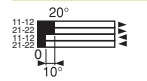
ZCK J7



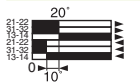
ZCK J8



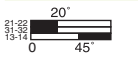
ZCK J9



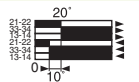
ZCK JD39



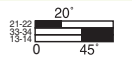
ZCK JD37



ZCK JD31

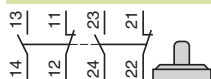


ZCK JD35

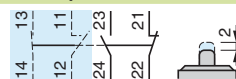


ZCK J4●

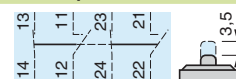
Unactuated



1st step



2nd step



Contact operation

■ contact closed
□ contact open

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

Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

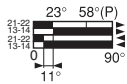
Fixed or plug-in body

Adaptable sub-assemblies

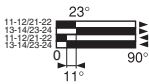
Function diagrams (positive operation assured only if the associated sub-assemblies are)

Head ZCK E05 with body

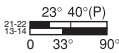
ZCK J1●



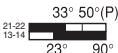
ZCK J2●



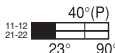
ZCK J5●



ZCK J6



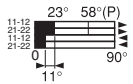
ZCK J7



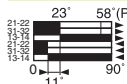
ZCK J8



ZCK J9



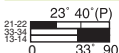
ZCK JD39



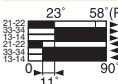
ZCK JD37



ZCK JD39

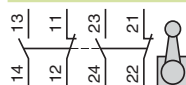


ZCK JD31

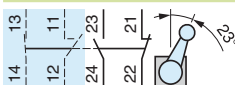


ZCK J4●

Unactuated



1st step, actuated from left or right

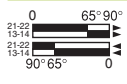


2nd step, actuated from left or right

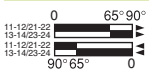


Head ZCK E09 with body

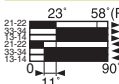
ZCK J1●



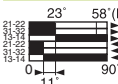
ZCK J2●



ZCK JD31



ZCK JD39

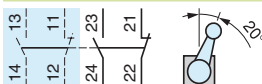


ZCK J404, J4104 (body with head)

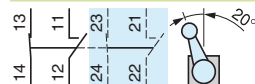
Unactuated



Actuated from left



Actuated from right



Contact operation

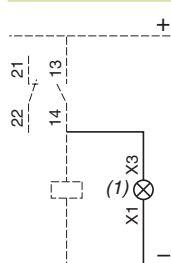
 contact closed
 contact open

(P) = positive opening point

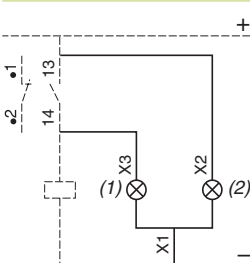
Wiring schemes

Indicator light modules

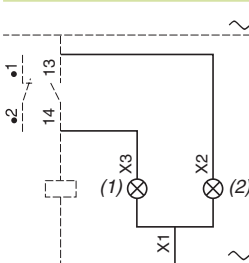
1 LED, ~ 24 V



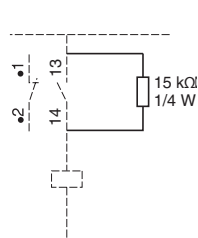
2 LEDs, ~ 24 V



2 neon lights, ~ 110/120 or 220/240 V



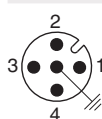
Module with resistor



(1) Orange indicator

(2) Green indicator

ZCK J●D



1 - 2 = N/C
3 - 4 = N/O
5 = $\perp$
4 A / 24 V max.



Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

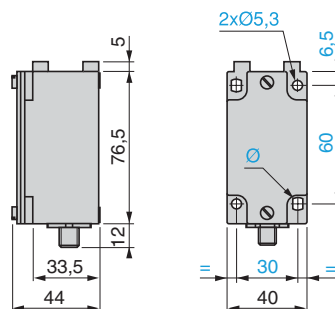
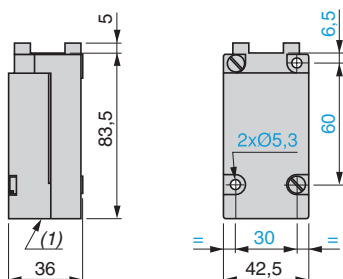
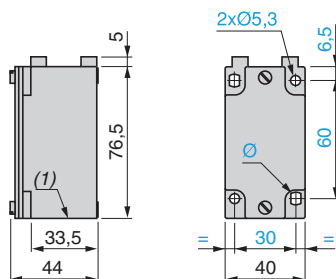
Adaptable sub-assemblies

Bodies

ZCK J1, J2, J5, J4, J2●, J3●, J6, J7, J8, J9
ZCK J1H29, J2H29, J5H29, J4H29, J2●H29, J3●H29,
J6H29, J7H29, J8H29, J9H29
ZCK J1H7, J2H7, J5H7, J4H7, J2●H7, J3●H7, J6H7,
J7H7, J8H7, J9H7

ZCK J11, J21, J41, J11●●
ZCK J11H29, J21H29, J41H29, J11●●H29
ZCK J11H7, J21H7, J41H7, J11●●H7

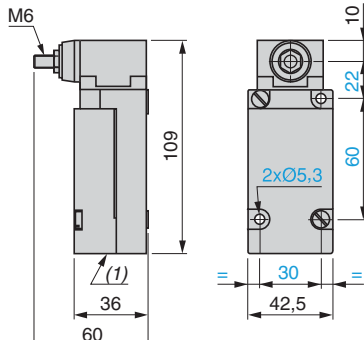
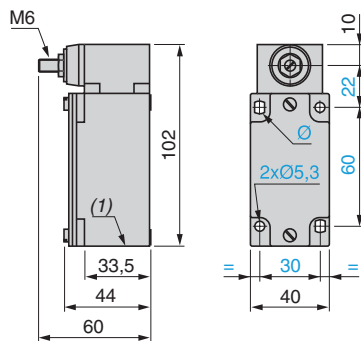
ZCK J1D, J5D, J6D, J7D, J8D



Bodies with rotary head mounted

ZCK J404, ZCK J404H29, ZCK J404H7

ZCK J4104, ZCK J4104H29, ZCK J4104H7

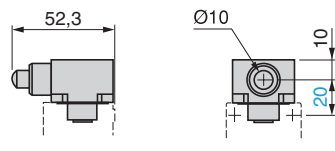
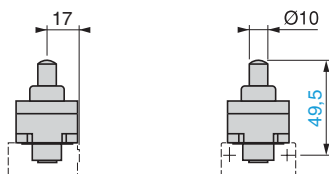
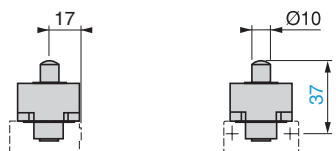


Plunger heads

ZCK E61

ZCK E619

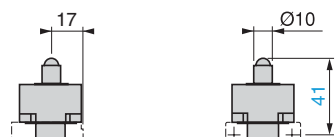
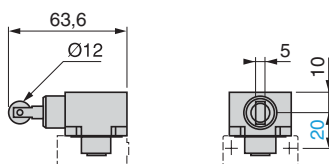
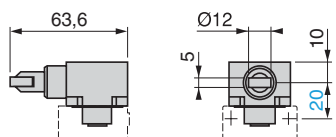
ZCK E63



ZCK E64

ZCK E65

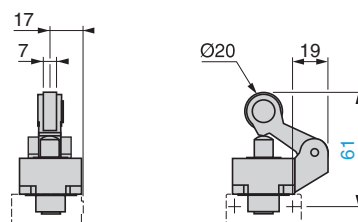
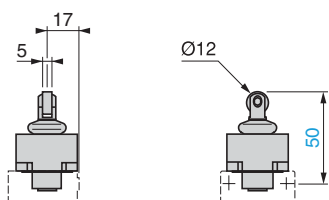
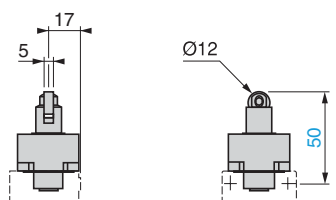
ZCK E66



ZCK E62, ZCK E67

ZCK E629

ZCK E21, E23



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13 cable gland or tapped 1/2" NPT.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit switches

Osiriswitch® Classic

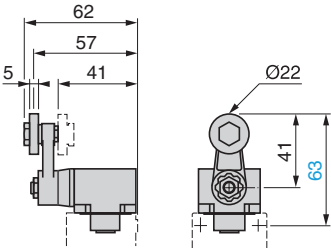
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

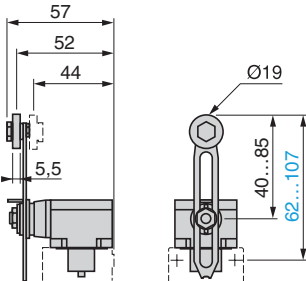
Adaptable sub-assemblies

Rotary head ZCK E05 with operating lever

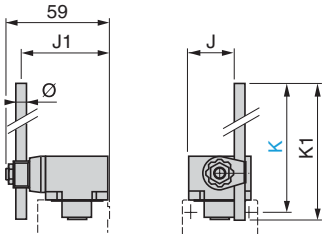
ZCK Y11, Y13, Y14



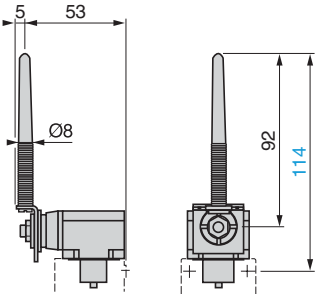
ZCK Y41, Y43



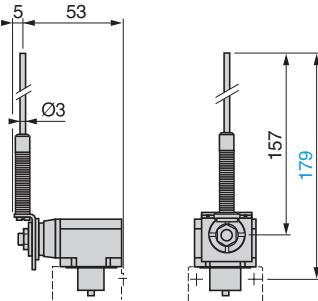
ZCK Y51, Y52, Y53, Y59



ZCK Y81



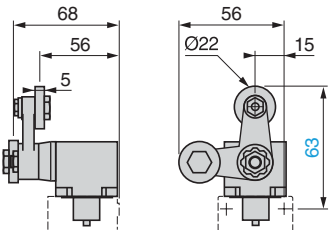
ZCK Y91



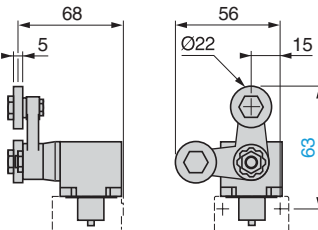
	J	J1	K max.	K1	Ø
ZCK Y51	20	49	137	123	Ø 3
ZCK Y52	20	49	137	125	Ø 3
ZCK Y53	20	49	137	125	Ø 3
ZCK Y59	26.2	48	212	200	Ø 6

Rotary head ZCK E09 with operating lever

ZCK Y61

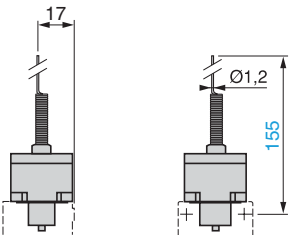


ZCK Y71

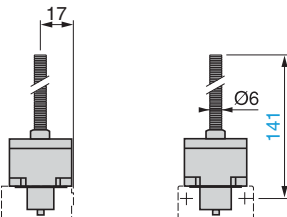


Multi-directional heads

ZCK E06



ZCK E08



Note: operating lever spindle threaded M6.

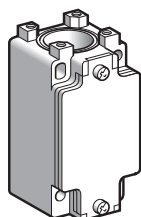
Limit switches

Osiswitch® Classic

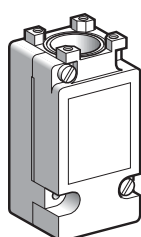
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

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



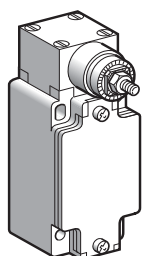
ZCK J1



ZCK J11

Body with contacts For plunger or rotary head						
Type	Contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
Fixed body						
1 step	2-pole 1 N/C + 1 N/O snap action (XE2S P2151)			Pg 13	ZCK J1	0.310
				ISO M20 x 1.5	ZCK J1H29	0.310
				1/2" NPT	ZCK J1H7	0.310
	Double-pole 2 C/O simultaneous snap action (XES P2021)		-	Pg 13	ZCK J2	0.310
				ISO M20 x 1.5	ZCK J2H29	0.310
				1/2" NPT	ZCK J2H7	0.310
	2-pole 1 N/C + 1 N/O break before make slow break (XE2N P2151)			Pg 13	ZCK J5	0.310
				ISO M20 x 1.5	ZCK J5H29	0.310
				1/2" NPT	ZCK J5H7	0.310
	2-pole 1 N/O + 1 N/C make before break slow break (XE2N P2161)			Pg 13	ZCK J6	0.310
				ISO M20 x 1.5	ZCK J6H29	0.310
				1/2" NPT	ZCK J6H7	0.310
	2-pole 1 N/C + 1 N/C simultaneous slow break (XE2N P2141)			Pg 13	ZCK J7	0.310
				ISO M20 x 1.5	ZCK J7H29	0.310
				1/2" NPT	ZCK J7H7	0.310
2-pole 1 N/O + 1 N/O simultaneous slow break (XE2N P2131)		-	Pg 13	ZCK J8	0.310	
			ISO M20 x 1.5	ZCK J8H29	0.310	
			1/2" NPT	ZCK J8H7	0.310	
2-pole 1 N/C + 1 N/C snap action (XE2S P2141)			Pg 13	ZCK J9	0.310	
			ISO M20 x 1.5	ZCK J9H29	0.310	
			1/2" NPT	ZCK J9H7	0.310	
2 step	Double-pole 2 C/O staggered snap action (XES P2031)		-	Pg 13	ZCK J4	0.310
				ISO M20 x 1.5	ZCK J4H29	0.310
				1/2" NPT	ZCK J4H7	0.310
				Plug-in body		
1 step	Single-pole 1 C/O snap action		-	Pg 13	ZCK J11	0.300
				ISO M20 x 1.5	ZCK J11H29	0.300
				1/2" NPT	ZCK J11H7	0.300
	Double-pole 2 C/O simultaneous snap action		-	Pg 13	ZCK J21	0.300
				ISO M20 x 1.5	ZCK J21H29	0.300
				1/2" NPT	ZCK J21H7	0.300
2 step	Double-pole 2 C/O staggered snap action		-	Pg 13	ZCK J41	0.300
				ISO M20 x 1.5	ZCK J41H29	0.300
				1/2" NPT	ZCK J41H7	0.300
Body with contacts With spring return rotary head (without operating lever)						
Type	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 C/O staggered snap action		-	Pg 13	ZCK J4046	0.455
				ISO M20 x 1.5	ZCK J4046H29	0.455
				1/2" NPT	ZCK J4046H7	0.455
Plug-in body						
2 step 1 from the left and 1 from the right	Double-pole 2 C/O staggered snap action		-	Pg 13	ZCK J41046	0.465
				ISO M20 x 1.5	ZCK J41046H29	0.465
				1/2" NPT	ZCK J41046H7	0.465

(1) : operating head able to guarantee positive opening operation.



ZCK J4046

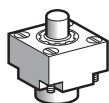
Limit switches

Osiswitch® Classic

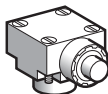
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

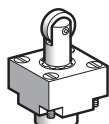
Adaptable sub-assemblies for low temperature applications (- 40 °C)



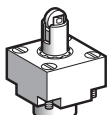
ZCK E616



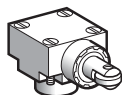
ZCK E636



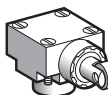
ZCK E626



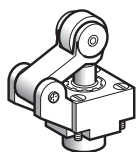
ZCK E676



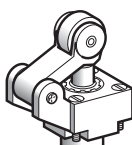
ZCK E646



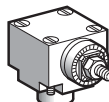
ZCK E656



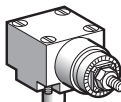
ZCK E216



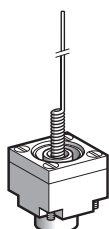
ZCK E236



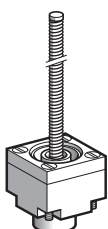
ZCK E056



ZCK E096



ZCK E066



ZCK E086

Plunger heads

Type of operator		Compatible bodies	Max. actuation speed	Positive operation (1)	Reference	Weight kg
For actuation on end						
End plunger metal		ZCK J●, ZCK J●●	0.5 m/s	⊙	ZCK E616	0.140
Side plunger metal		ZCK J●, ZCK J●●, except ZCK J4 and J41	0.5 m/s	⊙	ZCK E636	0.200
For actuation by 30° cam						
End roller plunger steel		ZCK J●, ZCK J●●	1 m/s	⊙	ZCK E626	0.155
End reinforced roller plunger steel		ZCK J●, ZCK J●●	1 m/s	⊙	ZCK E676	0.155
Side roller plunger steel	Horizontal	ZCK J●, ZCK J●●, except ZCK J4 and J41	0.6 m/s	⊙	ZCK E646	0.205
	Vertical	ZCK J●, ZCK J●●, except ZCK J4 and J41	0.6 m/s	⊙	ZCK E656	0.205
Roller lever plunger (1 direction of actuation)	Thermoplastic	ZCK J●, ZCK J●●	1.5 m/s	⊙	ZCK E216	0.185
	Steel	ZCK J●, ZCK J●●	1.5 m/s	⊙	ZCK E236	0.195

Rotary heads (without operating lever)

Type	Compatible bodies	Max. actuation speed	Positive operation (1)	Reference	Weight kg
Spring return, actuation from left AND right or from left OR right (see page 5/198)	ZCK J●, ZCK J●●	1.5 m/s by 30° cam	⊙	ZCK E056	0.165
Stay put, actuation from left AND right (see page 5/198)	ZCK J1, J11 ZCK J2, J21	1.5 m/s	—	ZCK E096	0.190

Multi-directional heads

Type of operator	Compatible bodies	Max. actuation speed	Positive operation (1)	Reference	Weight kg
For actuation by any moving part					
"Cat's whisker"	ZCK J●, ZCK J●●, except ZCK J4 and ZCK J41	1 m/s in any direction	—	ZCK E066	0.115
Spring rod lever	ZCK J●, ZCK J●●, except ZCK J4 and ZCK J41	0.5 m/s in any direction	—	ZCK E086	0.125

(1) ⊙: operating head able to guarantee positive opening operation.

Limit switches

Osiswitch® Classic

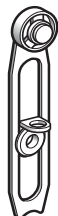
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

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



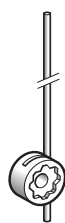
ZCK Y1●



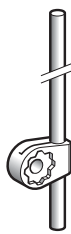
ZCK Y4●



ZCK Y51



ZCK Y5●



ZCK Y59



ZCK Y81



ZCK Y91



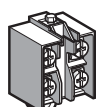
ZCK Y71



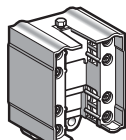
ZCK Y61



XE2S P21●1



XE2N P21●1



XES P20●1

Operating levers for rotary heads

Description		Positive operation (1)	Reference	Weight kg
For actuation by 30° cam				
Roller lever (2)	Thermoplastic	⊕	ZCK Y11	0.025
	Steel	⊕	ZCK Y13	0.035
	Steel, ball bearing mounted	⊕	ZCK Y14	0.030
Variable length roller lever (3)	Thermoplastic	–	ZCK Y41	0.030
	Steel	–	ZCK Y43	0.040

For actuation by any moving part

Square rod (2)	∅ 3 mm steel, L = 125 mm	–	ZCK Y51	0.025
Round rod (2)	∅ 3 mm steel, L = 125 mm	–	ZCK Y53	0.025
	∅ 3 mm glass fibre, L = 125 mm	–	ZCK Y52	0.020
	∅ 6 mm thermoplastic, L = 200 mm	–	ZCK Y59	0.030
Spring lever (3)		–	ZCK Y81	0.020
Spring metal rod lever (3)		–	ZCK Y91	0.025

For actuation by specific cam (for operation with ZCK-E096 head)

Forked arm and rollers (2) thermoplastic	1 track	–	ZCK Y71	0.035
	2 track	–	ZCK Y61	0.035

2- or double-pole contact blocks

Type	Scheme	For body type	Positive operation (1)	Reference	Weight kg
1 N/C + 1 N/O snap action		ZCK J1	⊕	XE2S P2151	0.020
1 N/C + 1 N/O break before make slow break		ZCK J5	⊕	XE2N P2151	0.020
2 C/O simultaneous snap action		ZCK J2	–	XES P2021	0.045
2 C/O staggered snap action		ZCK J4	–	XES P2031	0.045
1 N/O + 1 N/C make before break slow break		ZCK J6	⊕	XE2N P2161	0.020
1 N/C + 1 N/C simultaneous slow break		ZCK J7	⊕	XE2N P2141	0.020
1 N/O + 1 N/O simultaneous slow break		ZCK J8	–	XE2N P2131	0.020
1 N/C + 1 N/C snap action		ZCK J9	⊕	XE2S P2141	0.020

(1) ⊕ : operating lever able to guarantee positive opening operation or N/C contact with positive opening operation.

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

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

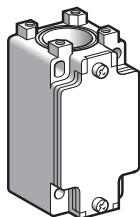
Limit switches

Osiswitch® Classic

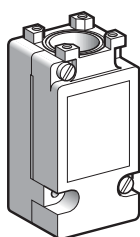
Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

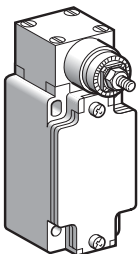
Adaptable sub-assemblies for high temperature applications (+ 120 °C)



ZCK J•



ZCK J•15



ZCK J4045

Body with contacts For plunger or rotary head						
Type	Contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
Fixed body						
1 step	2-pole 1 N/C + 1 N/O snap action (XE2S P2151)			Pg 13	ZCK J1	0.310
				ISO M20 x 1.5	ZCK J1H29	0.310
				1/2" NPT	ZCK J1H7	0.310
	Double-pole 2 C/O simultaneous snap action (XES P20215)		-	Pg 13	ZCK J25	0.310
				ISO M20 x 1.5	ZCK J25H29	0.310
				1/2" NPT	ZCK J25H7	0.310
	2-pole 1 N/C + 1 N/O break before make slow break (XE2N P2151)			Pg 13	ZCK J5	0.310
				ISO M20 x 1.5	ZCK J5H29	0.310
				1/2" NPT	ZCK J5H7	0.310
	2-pole 1 N/O + 1 N/C make before break slow break (XE2N P2161)			Pg 13	ZCK J6	0.310
				ISO M20 x 1.5	ZCK J6H29	0.310
				1/2" NPT	ZCK J6H7	0.310
	2-pole 1 N/C + 1 N/C simultaneous slow break (XE2N P2141)			Pg 13	ZCK J7	0.310
				ISO M20 x 1.5	ZCK J7H29	0.310
				1/2" NPT	ZCK J7H7	0.310
2-pole 1 N/O + 1 N/O simultaneous slow break (XE2N P2131)		-	Pg 13	ZCK J8	0.310	
			ISO M20 x 1.5	ZCK J8H29	0.310	
			1/2" NPT	ZCK J8H7	0.310	
2-pole 1 N/C + 1 N/C snap action (XE2S P2141)			Pg 13	ZCK J9	0.310	
			ISO M20 x 1.5	ZCK J9H29	0.310	
			1/2" NPT	ZCK J9H7	0.310	
2 step	Double-pole 2 C/O break before make snap action (XES P20315)		-	Pg 13	ZCK J45	0.310
				ISO M20 x 1.5	ZCK J45H29	0.310
				1/2" NPT	ZCK J45H7	0.310
				Plug-in body		
1 step	Single-pole 1 C/O snap action		-	Pg 13	ZCK J115	0.300
				ISO M20 x 1.5	ZCK J115H29	0.300
				1/2" NPT	ZCK J115H7	0.300
	Double-pole 2 C/O simultaneous snap action		-	Pg 13	ZCK J215	0.300
				ISO M20 x 1.5	ZCK J215H29	0.300
				1/2" NPT	ZCK J215H7	0.300
2 step	Double-pole 2 C/O break before make snap action		-	Pg 13	ZCK J415	0.300
				ISO M20 x 1.5	ZCK J415H29	0.300
				1/2" NPT	ZCK J415H7	0.300
				Body with contacts With spring return rotary head (without operating lever)		
Type	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 C/O break before make snap action		-	Pg 13	ZCK J4045	0.455
				ISO M20 x 1.5	ZCK J4045H29	0.455
				1/2" NPT	ZCK J4045H7	0.455
Plug-in body						
2 step 1 from the left AND 1 from the right	Double-pole 2 C/O break before make snap action		-	Pg 13	ZCK J41045	0.465
				ISO M20 x 1.5	ZCK J41045H29	0.465
				1/2" NPT	ZCK J41045H7	0.465

(1) : operating head able to guarantee positive opening operation.

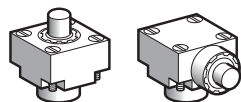
Limit switches

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

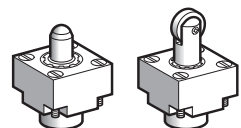
Fixed or plug-in body

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



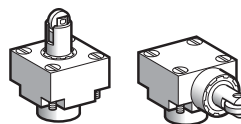
ZCK E615

ZCK E635



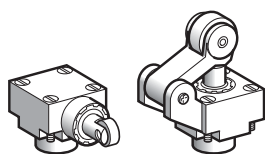
ZCK E665

ZCK E625



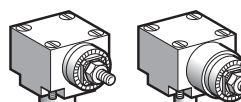
ZCK E675

ZCK E645



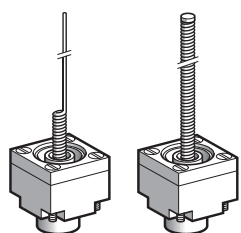
ZCK E655

ZCK E235



ZCK E055

ZCK E095



ZCK E065

ZCK E085

Plunger heads

Type of operator		Compatible bodies	Max. actuation speed	Positive operation (1)	Reference	Weight kg
For actuation on end						
End plunger	Metal	ZCK J1, J2, J4, ZCK J115, J215, J415, ZCK J5, J6, J7, J8, J9	0.5 m/s	⊕	ZCK E615	0.140
Side plunger	Metal	ZCK J1, J2, ZCK J115, J215, ZCK J5, J6, J7, J8, J9	0.5 m/s	⊕	ZCK E635	0.200
For actuation by 30° cam						
End ball bearing plunger	Steel	ZCK J1, J2, J4, ZCK J115, J215, J415, ZCK J5, J6, J7, J8, J9	0.1 m/s	⊕	ZCK E665	0.150
End roller plunger	Steel	ZCK J1, J2, J4, ZCK J115, J215, J415, ZCK J5, J6, J7, J8, J9	1 m/s	⊕	ZCK E625	0.155
End reinforced roller plunger	Steel	ZCK J1, J2, J4, ZCK J115, J215, J415, ZCK J5, J6, J7, J8, J9	1 m/s	⊕	ZCK E675	0.155
Side roller plunger	Steel Horizontal	ZCK J1, J2, ZCK J115, J215, ZCK J5, J6, J7, J8, J9	0.6 m/s	⊕	ZCK E645	0.205
	Steel Vertical	ZCK J1, J2, ZCK J115, J215, ZCK J5, J6, J7, J8, J9	0.6 m/s	⊕	ZCK E655	0.205
Roller lever plunger (1 direction of actuation)	Steel	ZCK J1, J2, J4, ZCK J115, J215, J415, ZCK J5, J6, J7, J8, J9	1.5 m/s	⊕	ZCK E235	0.195
	Thermoplastic	ZCK J1, J2, J4, ZCK J115, J215, J415, ZCK J5, J6, J7, J8, J9	1.5 m/s	⊕	ZCK E215	0.185

Rotary heads (without operating lever)

Type	Compatible bodies	Max. actuation speed	Positive operation (1)	Reference	Weight kg
Spring return, actuation from left AND right or from left OR right (see page 5/198)	ZCK J1, J2, J4, ZCK J115, J215, ZCK J415, ZCK J5, J6, J7, J8, J9	1.5 m/s by 30° cam	⊕	ZCK E055	0.165
Stay put, actuation from left AND right (see page 5/198)	ZCK J1, J2, ZCK J115, J215	0.5 m/s	–	ZCK E095	0.190

Multi-directional heads

Type of operator	Compatible bodies	Max. actuation speed	Positive operation (1)	Reference	Weight kg
For actuation by any moving part					
"Cat's whisker"	ZCK J1, J2, ZCK J115, J215, ZCK J5, J6, J7, J8, J9	1 m/s in any direction	–	ZCK E065	0.115
Spring rod lever	ZCK J1, J2, ZCK J115, J215, ZCK J5, J6, J7, J8, J9	0.5 m/s in any direction	–	ZCK E085	0.125

(1) ⊕ : operating head able to guarantee positive opening operation.

Limit switches

Osiriswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J

Fixed or plug-in body

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



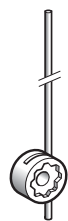
ZCK Y1●



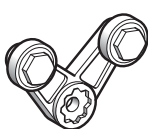
ZCK Y43



ZCK Y51



ZCK Y5●



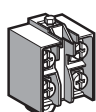
ZCK Y715



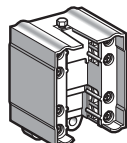
ZCK Y615



XE2S P21●1



XE2N P21●1



XES P20●15

Operating levers for rotary heads

Description		Positive operation (1)	Reference	Weight kg
For actuation by 30° cam				
Roller lever (2)	Thermoplastic	⊙	ZCK Y115	0.025
	Steel	⊙	ZCK Y13	0.035
	Steel, ball bearing mounted	⊙	ZCK Y14	0.030
Variable length roller lever (3)	Thermoplastic	—	ZCK Y415	0.030
	Steel	—	ZCK Y43	0.040
For actuation by any moving part				
Square rod (2)	∅ 3 mm Steel, L = 125 mm	—	ZCK Y51	0.025
Round rod (2)	∅ 3 mm steel, L = 125 mm	—	ZCK Y53	0.025
	∅ 3 mm glass fibre, L = 125 mm	—	ZCK Y52	0.020
For actuation by specific cam (for operation with ZCK-E095 head only)				
Forked arm and rollers (2)	1 track	—	ZCK Y715	0.035
	2 track	—	ZCK Y615	0.035

2- or double-pole contact blocks

Type of operator	Scheme	For body type	Positive operation (1)	Reference	Weight kg
1 N/C + 1 N/O snap action		ZCK J1	⊙	XE2S P2151	0.020
1 N/C + 1 N/O break before make slow break		ZCK J5	⊙	XE2N P2151	0.020
2 C/O simultaneous snap action		ZCK J25	—	XES P20215	0.045
2 C/O staggered snap action		ZCK J45	—	XES P20315	0.045
1 N/O + 1 N/C make before break slow break		ZCK J6	⊙	XE2N P2161	0.020
1 N/C + 1 N/C simultaneous slow break		ZCK J7	⊙	XE2N P2141	0.020
1 N/O + 1 N/O simultaneous slow break		ZCK J8	—	XE2N P2131	0.020
1 N/C + 1 N/C snap action		ZCK J9	⊙	XE2S P2141	0.020

(1) ⊙ : operating lever able to guarantee positive opening operation or N/C contact with positive opening operation.

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

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

Limit switches

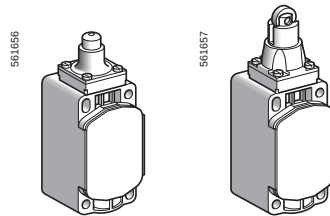
Osiswitch® Classic

Double insulated, type XCK S

Conforming to CENELEC EN 50041

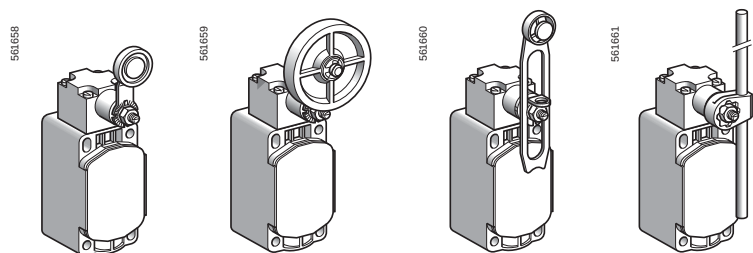
■ XCK S
with 1 cable entry

□ With head for linear movement (plunger) operators



Page 5/114

□ With head for rotary movement (lever) operators



Page 5/114

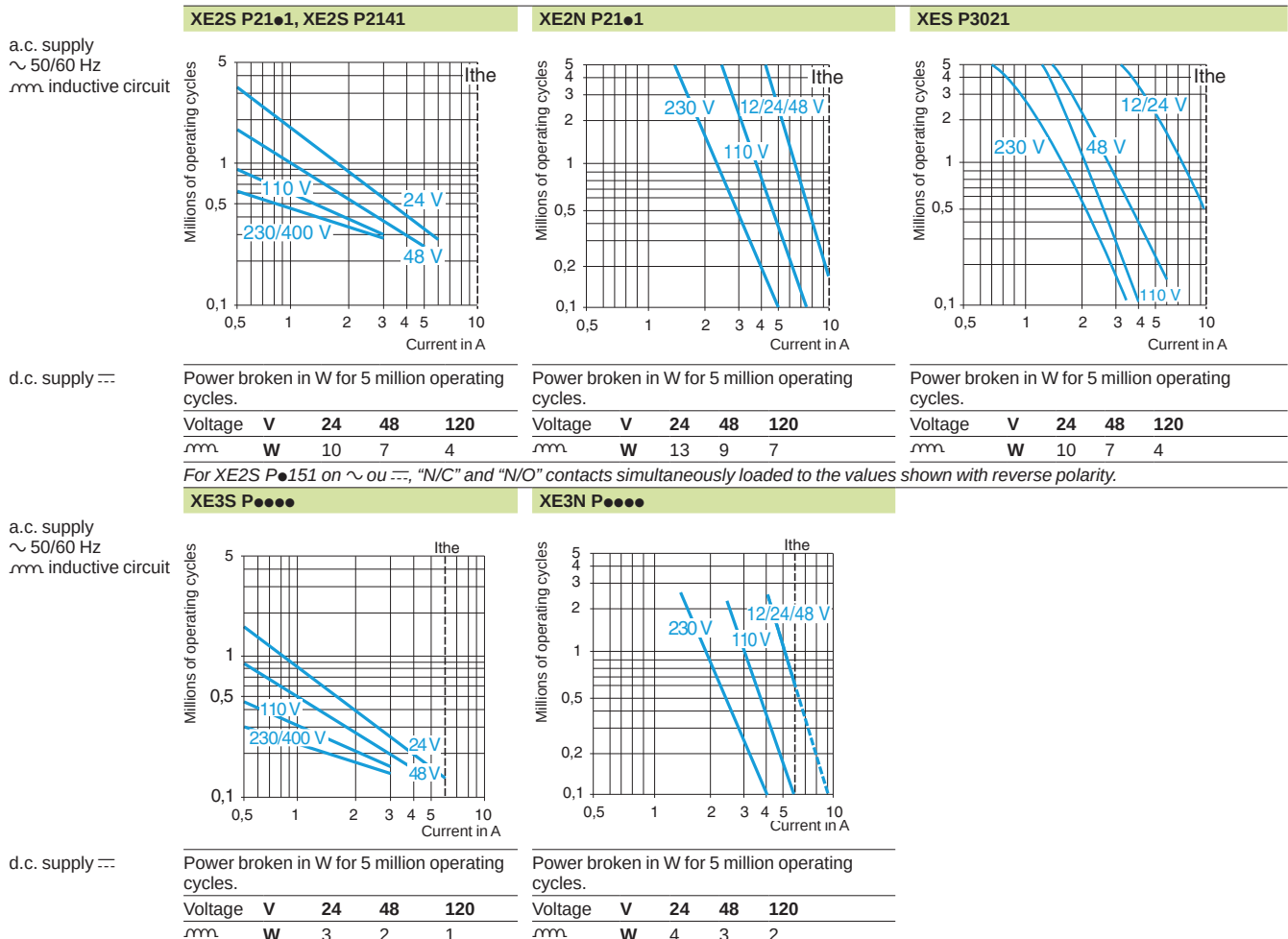
Environment characteristics

Conforming 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
Approvals		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		Body and heads : plastic

Contact block characteristics		
Rated operational characteristics	XE2● P	~ AC-15 ; A300 (Ue = 240 V, Ie = 3 A) ; Ithe = 10 A --- DC-13 ; Q300 (Ue = 250 V, Ie = 0,27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3● P	~ AC-15 ; B300 (Ue = 240 V, Ie = 1,5 A) ; Ithe = 6 A --- DC-13 ; R300 (Ue = 250 V, Ie = 0,1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage	XE2● P	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
	XE3● P	Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	XE2● P	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
	XE3● P	U imp = 4 kV conforming to IEC 60947-1, IEC 60664
Positive operation (Dpg. on model)		N/C 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)
Cabling (screw and captive cable clamp terminals)	XE2S P21●1	Clamping capacity, min. : 1 x 0.34 mm ² , max. : 2 x 1.5 mm ²
	XE2N P21●1	Clamping capacity, min. : 1 x 0.5 mm ² , max. : 2 x 2.5 mm ²
	XES P3021	Clamping capacity, min. : 1 x 0.75 mm ² , max. : 2 x 1.5 mm ²
	XE3N P and XE3S P	Clamping capacity, min. : 1 x 0.34 mm ² , max. : 1 x 1 mm ² or 2 x 0.75 mm ²
Minimum actuation speed		XE2S P21●1, XES P3021 and XE3S P : 0.01 m/minute XE2N P21●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 per hour
- Load factor : 0.5



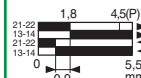
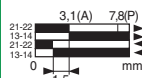
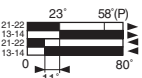
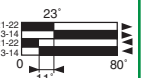
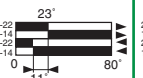
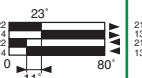
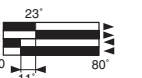
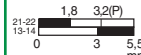
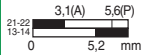
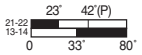
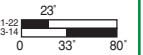
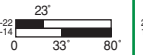
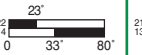
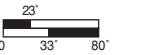
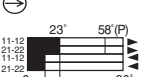
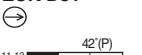
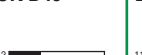
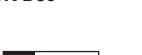
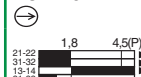
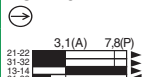
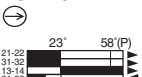
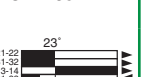
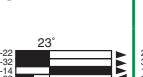
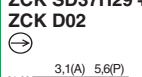
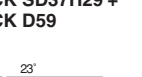
Limit switches

Osiswitch® Classic

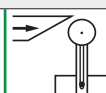
Plastic, double insulated, type XCK S

Conforming to CENELEC EN 50041

Complete switches with 1 ISO M20 x 1.5 cable entry

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body)				Form D (1)
	Form B (1)	Form C (1)	Form A (1)				
							
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever (4)	Elastomer roller lever, Ø 50 mm (4)	Variable length thermoplastic roller lever (4)	Variable length elastomer roller lever, Ø 50 mm (4)	Round thermoplastic rod lever, Ø 6 mm (5) (6)
References (2) (3)							
	2-pole N/C + N/O snap action (XE2S P2151)	XCK S101H29 	XCK S102H29 	XCK S131H29 	XCK S139H29 	XCK S141H29 	XCK S149H29 
							XCK S159H29 
	2-pole N/C + N/O break before make, slow break (XE2N P2151)	XCK S501H29 	XCK S502H29 	XCK S531H29 	XCK S539H29 	XCK S541H29 	XCK S549H29 
							XCK S559H29 
	2-pole N/C + N/C snap action (XE2S P2141)	ZCK S9H29 + ZCK D01 	ZCK S9H29 + ZCK D02 	ZCK S9H29 + ZCK D31 	ZCK S9H29 + ZCK D39 	ZCK S9H29 + ZCK D41 	ZCK S9H29 + ZCK D49 
							ZCK S9H29 + ZCK D59 
	2-pole N/C + N/C simultaneous, slow break (XE2N P2141)	ZCK S7H29 + ZCK D01 	ZCK S7H29 + ZCK D02 	ZCK S7H29 + ZCK D31 	ZCK S7H29 + ZCK D39 	ZCK S7H29 + ZCK D41 	ZCK S7H29 + ZCK D49 
							ZCK S7H29 + ZCK D59 
	3-pole N/C + N/C + N/O snap action (XE3S P2141)	ZCK SD39H29 + ZCK D01 	ZCK SD39H29 + ZCK D02 	ZCK SD39H29 + ZCK D31 	ZCK SD39H29 + ZCK D39 	ZCK SD39H29 + ZCK D41 	ZCK SD39H29 + ZCK D49 
							ZCK SD39H29 + ZCK D59 
	3-pole N/C + N/C + N/O break before make, slow break (XE3N P2141)	ZCK SD37H29 + ZCK D01 	ZCK SD37H29 + ZCK D02 	ZCK SD37H29 + ZCK D31 	ZCK SD37H29 + ZCK D39 	ZCK SD37H29 + ZCK D41 	ZCK SD37H29 + ZCK D49 
							ZCK SD37H29 + ZCK D59 
Weight (kg)	0.095	0.105	0.145	0.150	0.155	0.155	0.150
Contact operation	 contact closed  contact open		(A) = cam displacement (P) = positive opening point		⊙ N/C contact with positive opening operation		

Characteristics

Switch actuation						
Type of actuation						
Maximum actuation speed		0.5 m/s		1.5 m/s		1 m/s
Mechanical durability (7) (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 (3)		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 5/199.

(2) Switches with gold contacts or eyelet type connections: please consult your Regional Sales Office.

(3) For an entry tapped for a Pg 13 cable gland, delete H29 from the end of the reference. Example: XCK S101H29 becomes XCK S101.

(4) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the lever mounting.

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

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

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

Limit switches

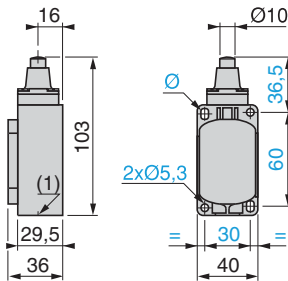
Osiswitch® Classic

Plastic, double insulated, type XCK S

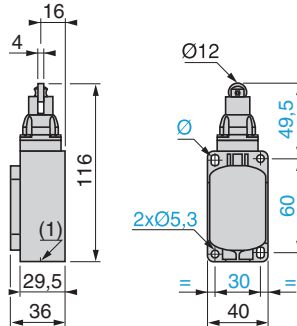
Conforming to CENELEC EN 50041

Complete switches with 1 ISO M20 x 1.5 cable entry

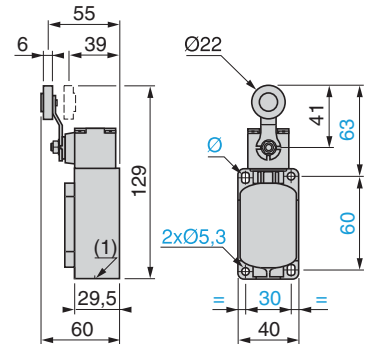
XCK S●01H29
ZCK S● + ZCK D01



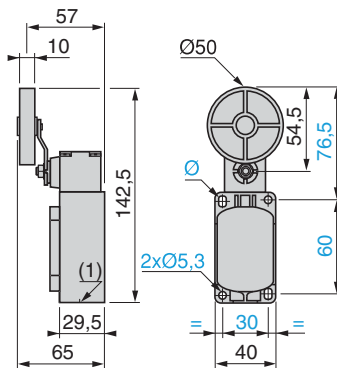
XCK S●02H29
ZCK S● + ZCK D02



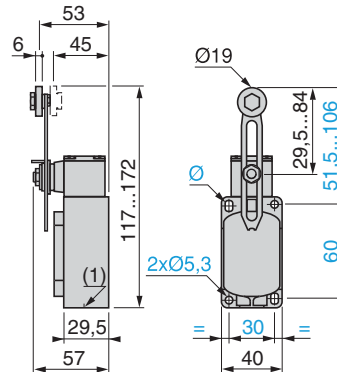
XCK S●31H29
ZCK S● + ZCK D31



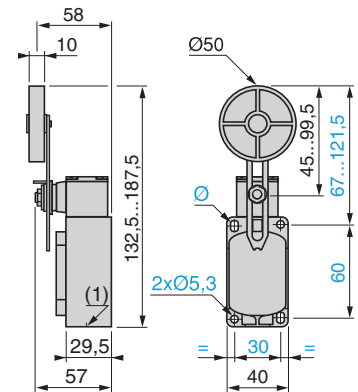
XCK S●39H29
ZCK S● + ZCK D39



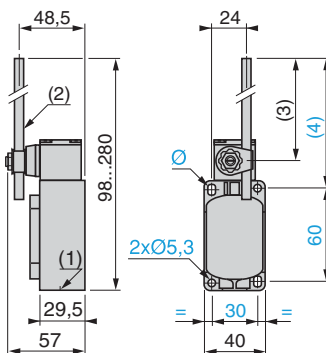
XCK S●41H29
ZCK S● + ZCK D41



XCK S●49H29
ZCK S● + ZCK D49



XCK S●59H29
ZCK S● + ZCK D59



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13 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.

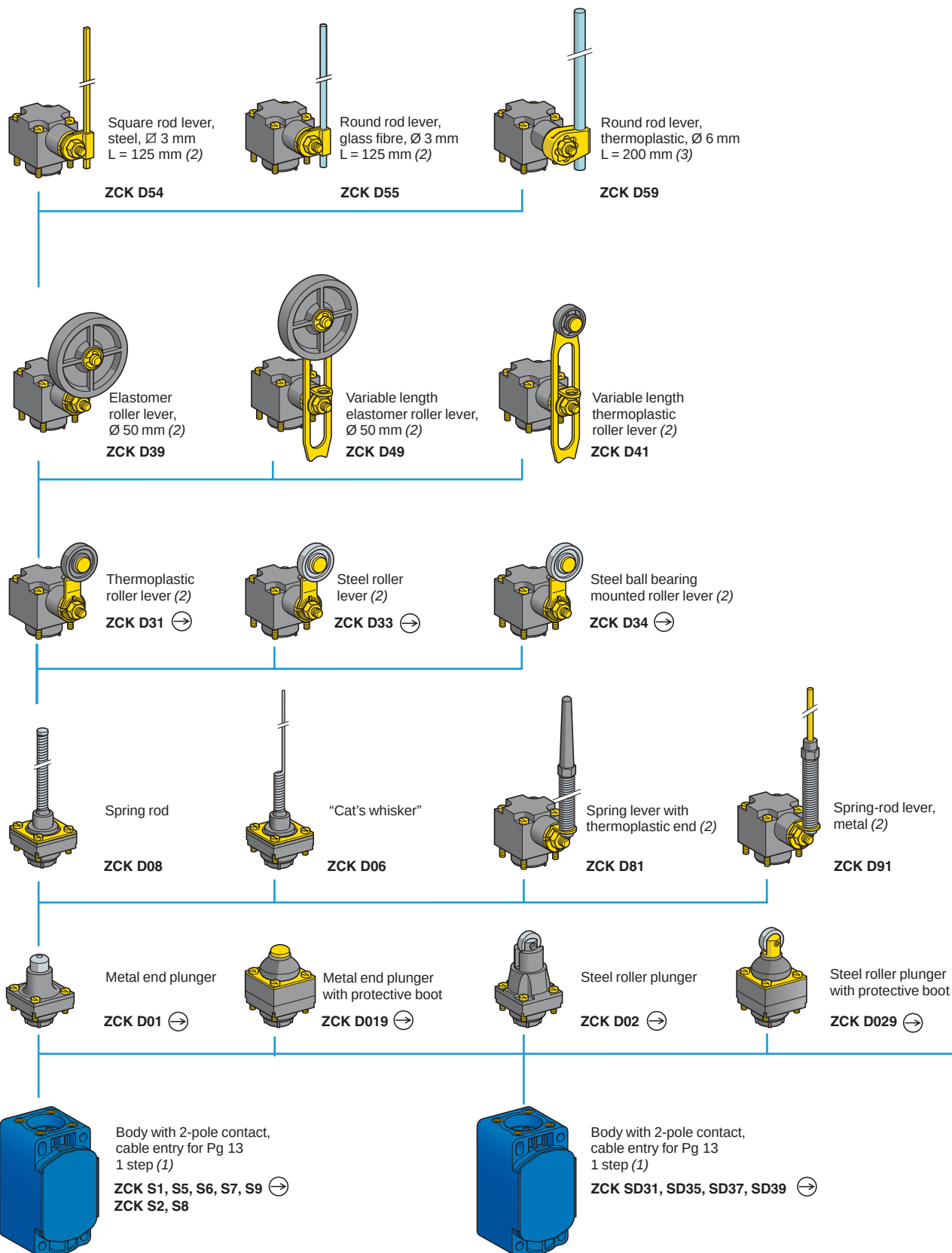
Limit switches

Osiswitch® Classic

Plastic, double insulated, type XCK S

Conforming to CENELEC EN 50041

Variable composition



(1) For further details, see page 5/18. For a cable entry tapped ISO M20 x 1.5, add **H29** to the reference.

Example: ZCK S1 becomes **ZCK S1H29**.

(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.

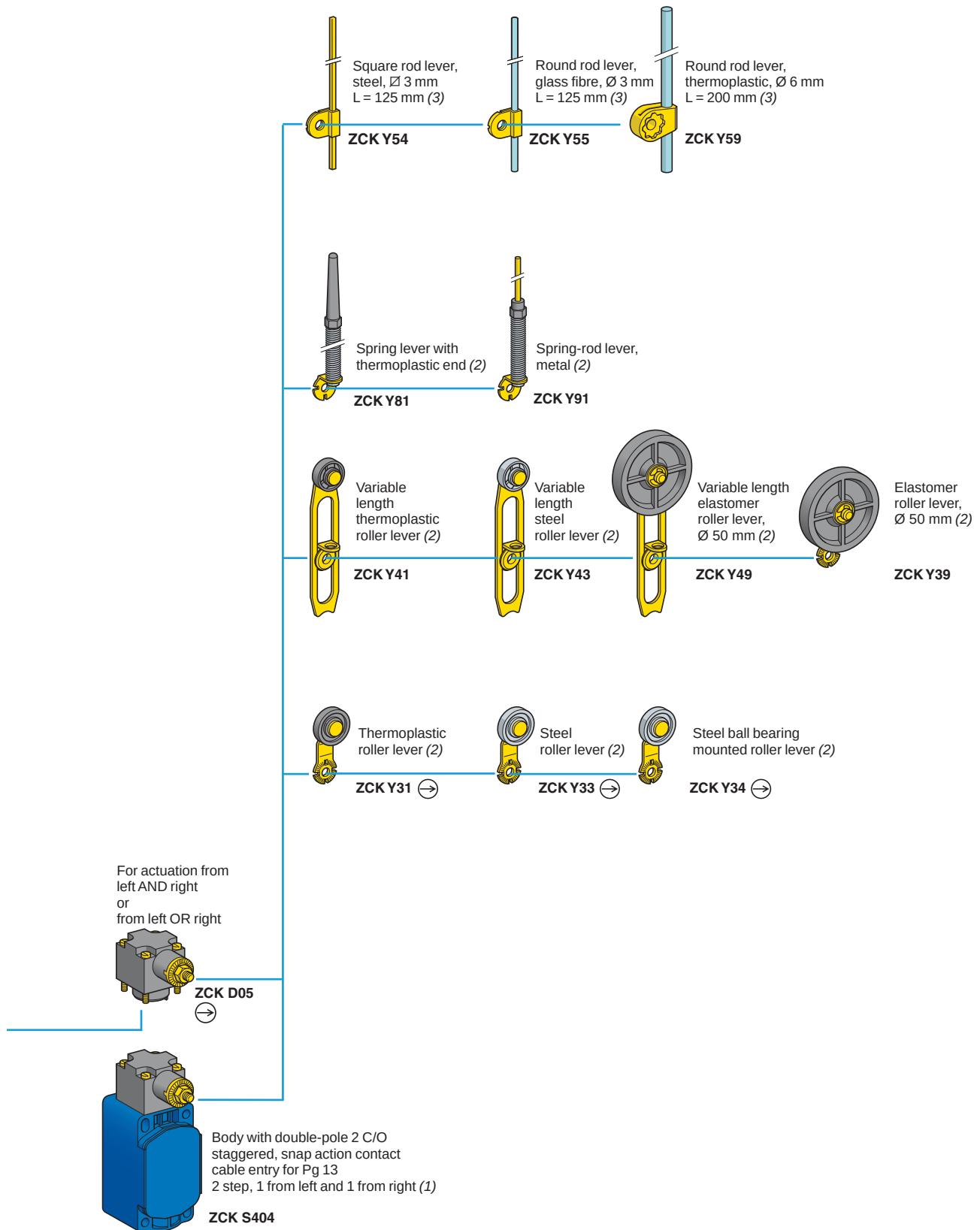
Limit switches

Osiriswitch® Classic

Plastic, double insulated, type XCK S

Conforming to CENELEC EN 50041

Variable composition



(1) For further details, see page 5/18. For a cable entry tapped ISO M20 x 1.5, add **H29** to the reference.

Example: ZCK S1 becomes **ZCK S1H29**.

⊙: N/C 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.

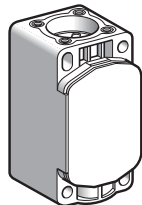
Limit switches

Osiswitch® Classic

Plastic, double insulated, type XCK S

Conforming to CENELEC EN 50041

Adaptable sub-assemblies



ZCK S●

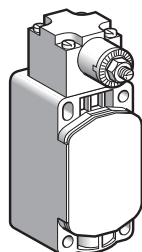
Bodies with 2-pole contact

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
1 step	N/C + N/O snap action (XE2S P2151)			Pg 13	ZCK S1	0.080
				ISO M20 x 1.5	ZCK S1H29	0.080
	2 C/O simultaneous, snap action (XES P3021)		-	Pg 13	ZCK S2	0.080
				ISO M20 x 1.5	ZCK S2H29	0.080
	N/C + N/O break before make, slow break (XE2N P2151)			Pg 13	ZCK S5	0.080
				ISO M20 x 1.5	ZCK S5H29	0.080
	N/O + N/C make before make, slow break (XE2N P2161)			Pg 13	ZCK S6	0.080
				ISO M20 x 1.5	ZCK S6H29	0.080
	N/C + N/C simultaneous, slow break (XE2N P2141)			Pg 13	ZCK S7	0.080
				ISO M20 x 1.5	ZCK S7H29	0.080
	N/O + N/O simultaneous, slow break (XE2N P2131)		-	Pg 13	ZCK S8	0.080
				ISO M20 x 1.5	ZCK S8H29	0.080
	N/C + N/C snap action (XE2S P2141)			Pg 13	ZCK S9	0.080
				ISO M20 x 1.5	ZCK S9H29	0.080

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 C/O staggered, snap action		-	Pg 13	ZCK S404	0.150
				ISO M20 x 1.5	ZCK S404H29	0.150



ZCK S404

Bodies with 3-pole contact and 1 cable entry

Type	With contact block	Scheme	Positive operation (1)	Cable entry	Reference	Weight kg
-	N/C + N/O + N/O snap action (XE3S P2151)			Pg 13	ZCK SD31	0.080
				ISO M20 x 1.5	ZCK SD31H29	0.080
	N/C + N/C + N/O snap action (XE3S P2141)			Pg 13	ZCK SD39	0.080
				ISO M20 x 1.5	ZCK SD39H29	0.080
-	N/C + N/C + N/O break before make, slow break (XE3N P2141)			Pg 13	ZCK SD37	0.080
				ISO M20 x 1.5	ZCK SD37H29	0.080
-	N/C + N/O + N/O break before make, slow break (XE3N P2151)			Pg 13	ZCK SD35	0.080
				ISO M20 x 1.5	ZCK SD35H29	0.080

(1) : N/C contact with positive opening operation or head assuring positive opening operation.

Limit switches

Osiswitch® Classic

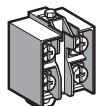
Plastic, double insulated, type XCK S

Conforming to CENELEC EN 50041

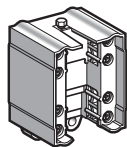
Adaptable sub-assemblies



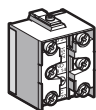
XE2S P21•1



XE2N P21•1



XES P3021



XE3p P21••

Contact blocks

Type of contact	Scheme	For body	Positive operation (1)	Reference	Weight kg
2-pole contact					
N/C + N/O snap action		ZCK S1	⊙	XE2S P2151	0.020
N/C + N/O break before make, slow break		ZCK S5	⊙	XE2N P2151	0.020
2 C/O simultaneous, snap action		ZCK S2	—	XES P3021	0.045
N/O + N/C make before break, slow break		ZCK S6	⊙	XE2N P2161	0.020
N/C + N/C simultaneous, slow break		ZCK S7	⊙	XE2N P2141	0.020
N/O + N/O simultaneous, slow break		ZCK S8	—	XE2N P2131	0.020
N/C + N/C snap action		ZCK S9	⊙	XE2S P2141	0.020
3-pole contact					
N/C + N/O + N/O snap action		ZCK SD31	⊙	XE3S P2151	0.035
N/C + N/C + N/O snap action		ZCK SD39	⊙	XE3S P2141	0.035
N/C + N/C + N/O break before make, slow break		ZCK SD37	⊙	XE3N P2141	0.035
N/C + N/O + N/O break before make, slow break		ZCK SD35	⊙	XE3N P2151	0.035

(1) ⊙ : N/C contact with positive opening operation or sub-assembly assuring positive opening operation.

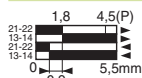
Other versions

Gold flashed contacts.

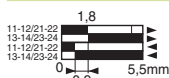
Please consult your Regional Sales Office.

Heads ZCK D01, D109 with body

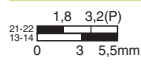
ZCK S1



ZCK S2



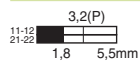
ZCK S5



ZCK S6



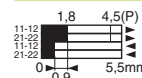
ZCK S7



ZCK S8



ZCK S9



ZCK SD39



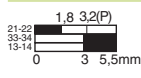
ZCK SD37



ZCK SD31

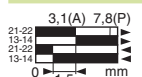


ZCK SD35

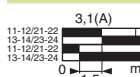


Heads ZCK D02, D029 with body

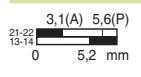
ZCK S1



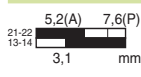
ZCK S2



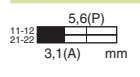
ZCK S5



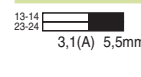
ZCK S6



ZCK S7



ZCK S8



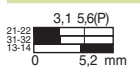
ZCK S9



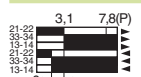
ZCK SD39



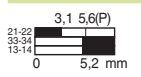
ZCK SD37



ZCK SD31

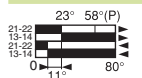


ZCK SD35

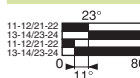


Heads ZCK D31, D33, D34 with body

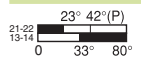
ZCK S1



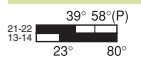
ZCK S2



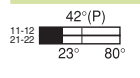
ZCK S5



ZCK S6



ZCK S7



ZCK S8



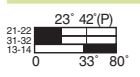
ZCK S9



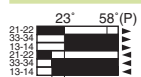
ZCK SD39



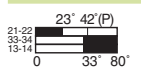
ZCK SD37



ZCK SD31

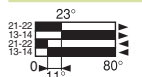


ZCK SD35

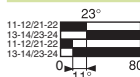


Heads ZCK D39, D41, D49, D54, D55, D59, D81, D91 with body

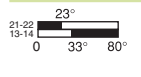
ZCK S1



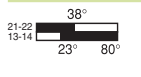
ZCK S2



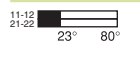
ZCK S5



ZCK S6



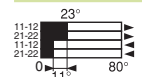
ZCK S7



ZCK S8



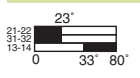
ZCK S9



ZCK SD39



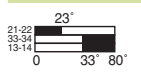
ZCK SD37



ZCK SD31

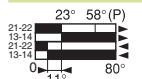


ZCK SD35

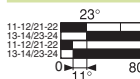


Heads ZCK D05 (positive operation only assured with a → operating lever) with body

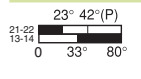
ZCK S1



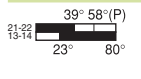
ZCK S2



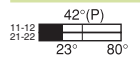
ZCK S5



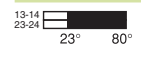
ZCK S6



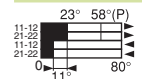
ZCK S7



ZCK S8



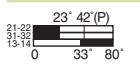
ZCK S9



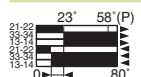
ZCK SD39



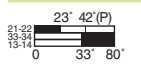
ZCK SD37



ZCK SD31

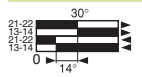


ZCK SD35

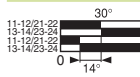


Heads ZCK D06, D08 with body

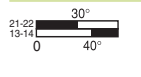
ZCK S1



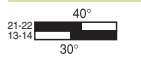
ZCK S2



ZCK S5



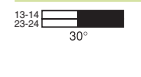
ZCK S6



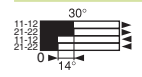
ZCK S7



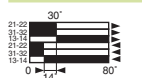
ZCK S8



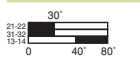
ZCK S9



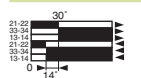
ZCK SD39



ZCK SD37



ZCK SD31



ZCK SD35

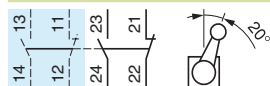


ZCK S404 (body with head)

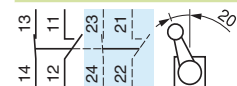
Unactuated



Actuated from left



Actuated from right



Contact operation

■ contact closed

□ contact open

(A) = cam displacement

(P) = positive opening point

Limit switches

Osiriswitch® Classic

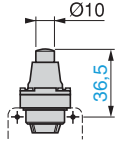
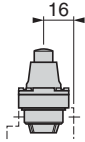
Plastic, double insulated, type XCK S

Conforming to CENELEC EN 50041

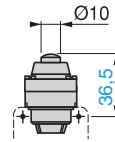
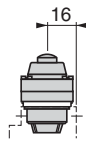
Adaptable sub-assemblies

Plunger heads

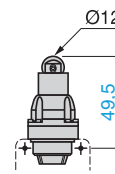
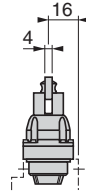
ZCK D01



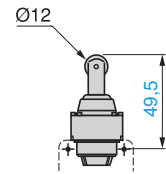
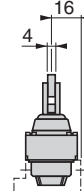
ZCK D019



ZCK D02

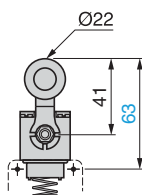
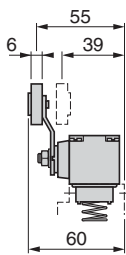


ZCK D029

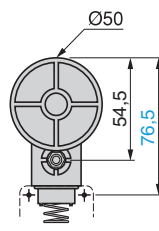
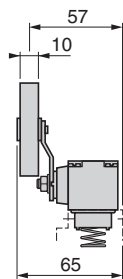


Rotary heads

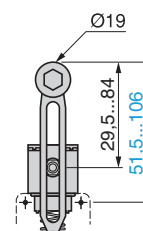
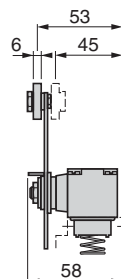
ZCK D31, D33, D34



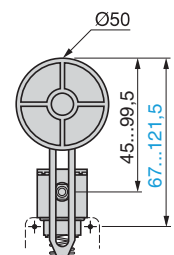
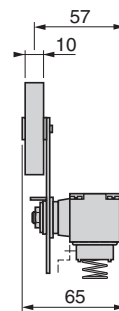
ZCK D39



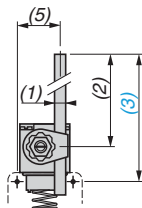
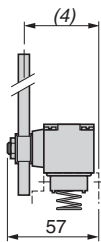
ZCK D41



ZCK D49

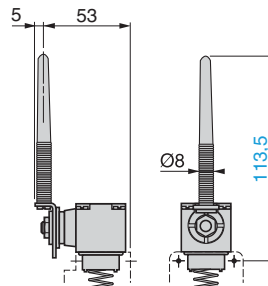


ZCK D54, D55, D59

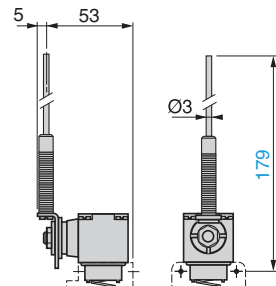


ZCK	(1) rod	(2)	(3)	(4)	(5)
D54	Ø 3, L = 125	115 max.	137 max.	49	24
D55	Ø 3, L = 125	115 max.	137 max.	49	24
D59	Ø 6, L = 200	190 max.	212 max.	46.5	26.2

ZCK D81

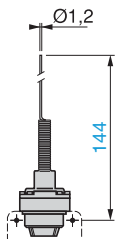
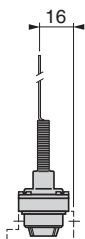


ZCK D91

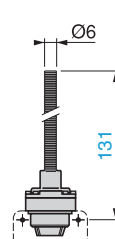
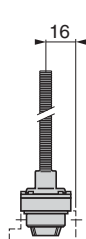


Multi-directional heads

ZCK D06

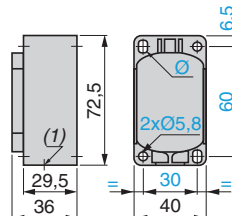


ZCK D08

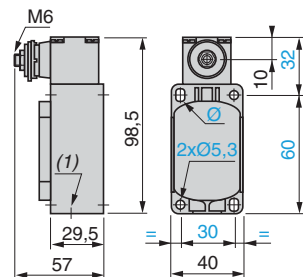


Bodies with contacts

ZCK S1, S2, S5, S6, S7, S8, S9
ZCK S1H29, S2H29, S5H29, S6H29, S7H29, S8H29, S9H29
ZCK SD3●, SD3●H29



ZCK S404, S404H29



(1) 1 tapped entry for ISO M20 x 1.5 or Pg 13 cable gland.
Ø: 2 elongated holes Ø 5.3 x 7.3.

Limit switches

Osiswitch® Classic

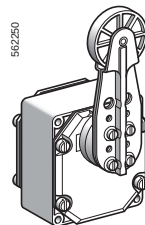
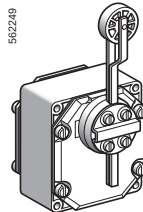
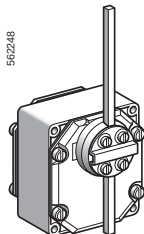
For hoisting and mechanical handling applications,
types XCR and XCK MR

For conveyor belt shift monitoring, type XCR T

■ XCR

□ With head for rotary movement operators, spring return to off position

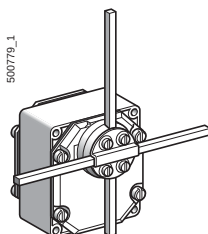
1 contact actuation position per direction



Page 5/124

□ With head for rotary movement operators, stay put

1 contact actuation position per direction



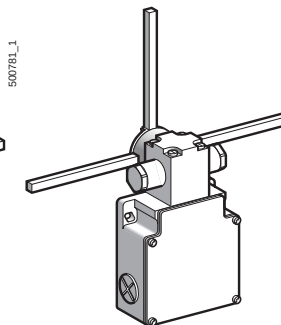
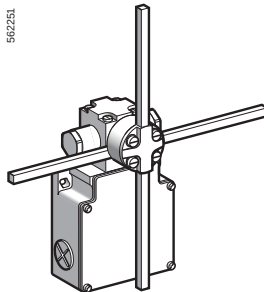
Page 5/124

■ XCK MR

□ With head for rotary movement operators, stay put

4 contact actuation positions

1 contact per position: + 90°, + 180°, - 90° and - 180°



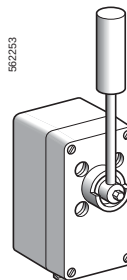
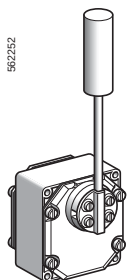
Page 5/130

■ XCR T

□ With head for rotary movement operators, spring return to off position

2 contact actuation positions per direction

1 actuated at 10°, other contact actuated at 18°



Page 5/126

Limit switches

Osiswitch® Classic

For hoisting and mechanical handling applications,
types XCR and XCK MR

For conveyor belt shift monitoring, type XCR T

Environment characteristics

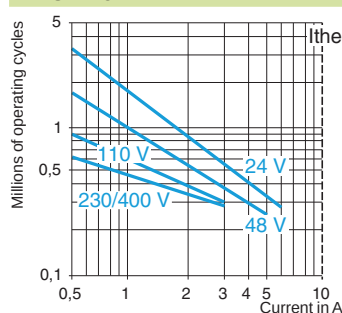
Conforming to standards	Products	IEC/EN 60947-5-1, VDE 0660-200 (CSA C22-2 n° 14 for XCR), CCC (for XCR)
	Machine assemblies	IEC/EN 60204-1, NF C 79-130
Product certifications	Standard version	XCR A, B, E, F : CSAA300
	Special version	XCR A, B, E, F : CSAA300, 1/2" NPT
Protective treatment	Standard version	"TC"
Ambient air temperature	Operation	- 25...+ 70 °C
	Storage	- 40...+ 70 °C (+ 85 °C for XCK MR)
Vibration resistance	XCR : 9 gn (10...500 Hz), XCK MR : 25 gn (10...500 Hz) conforming to IEC 60068-2-6	
Shock resistance	XCR A, B, E, F : 68 gn, XCR T : 30 gn (18 ms), XCK MR : 50 gn conforming to IEC 60068-2-27	
Electric shock protection	Class I conforming to IEC 60536 and NF C 20-030	
Degree of protection	XCR A, B, E, F : IP 54 conforming to IEC 60529 ; IP 54S conforming to NF C 20-010 XCR T : IP 65 conforming to IEC 60529 ; IP 65S conforming to NF C 20-010 XCK MR : IP 66 conforming to IEC 60529 ; IP 66S conforming to NF C 20-010	
Enclosure	XCR and XCK MR : metal, except XCR T315 : polyester	
Cable entry	XCR : tapped entry for n° 13 (Pg 13.5) cable gland XCK MR : 3 tapped entries for n° 13 (Pg 13.5) cable gland or tapped M20 x 1.5	

Contact block characteristics

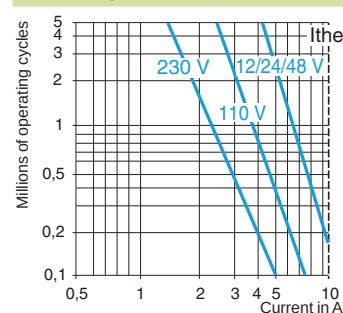
Rated operational characteristics	$\sim$ AC-15 ; A300 ($U_e = 240$ V, $I_e = 3$ A) $\equiv$ DC-13 ; XCR : Q300 ($U_e = 250$ V, $I_e = 0.27$ A), XCK MR : Q150 ($U_e = 125$ V, $I_e = 0.55$ A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1	
Rated insulation voltage	$U_i = 500$ V degree of pollution 3 conforming to IEC 60947-1 and VDE 0110, group C conforming to NF C 20-040 $U_i = 300$ V conforming to UL 508, CSA C22-2 n° 14	
Rated impulse withstand voltage	$U_{imp} = 6$ kV conforming to IEC 60947-1, IEC 60664	
Positive operation (Depending on model)	N/C contacts with positive opening operation to IEC 60947-5-1 Section 3, EN 60947-5-1 (contacts 21-22 of XCK MR)	
Resistance across terminals	≤ 25 m Ω conforming to NF C 93-050 method A or IEC 60255-7 category 3	
Short-circuit protection	10 A cartridge fuse type gG (gl)	
Cabling	Screw clamp terminals	XE2S P2151 : Clamping capacity, min: 1 x 0.34 mm ² , max: 2 x 1.5 mm ² XE2N P2151 : Clamping capacity, min: 1 x 0.5 mm ² , max: 2 x 2.5 mm ² XCR T contacts: Clamping capacity, min: 1 x 0.5 mm ² , max: 2 x 2.5 mm ² XCK MR contacts: Clamping capacity, min: 1 x 0.34 mm ² , max: 2 x 1.5 mm ² or 1 x 2.5 mm ²
Minimum actuation speed	XE2S P2151 and XCR T contacts: 0.01 m/minute, XE2N P2151 and XCK MR contacts: 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 per hour - Load factor: 0.5	

a.c. supply
 $\sim$ 50/60 Hz
 inductive circuit

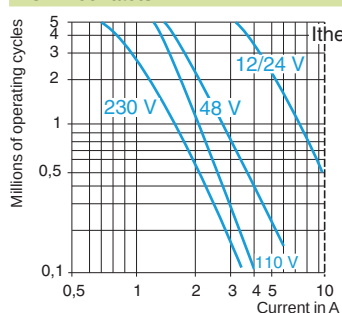
XE2S P2151



XE2N P2151



XCR T contacts



d.c. supply $\equiv$

	Voltage V	24	48	120
Power broken in W for 5 million operating cycles	XE2S P2151	10	7	4
	XE2N P2151	13	9	7
	XCR T contacts	10	7	4

For XE2S P2151 on $\sim$ or $\equiv$ N/C and N/O contacts simultaneously loaded to the values shown with reverse polarity.

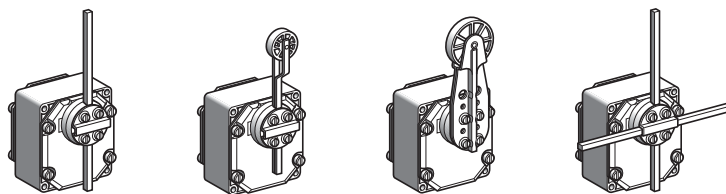
Limit switches

Osiswitch® Classic

For hoisting and materials handling applications,
type XCR

Complete switches with 1 cable entry

Type of head	Rotary with spring return to off position	Stay put
Maximum displacement	55° in each direction	90° in each direction

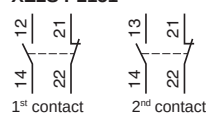


Type of operator	Metal rod, $\varnothing$ 6 mm	Thermoplastic roller lever	Large thermoplastic roller lever	Metal rods, U 6 mm crossed or "T" (1)
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(1) Crossed rods for XCR E●8, "T" rods for XCR F●7.

References of complete switches (⊙ N/C contact with positive opening operation)

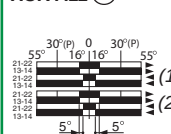
Two 2-pole 1 N/C + 1 N/O
snap action
XE2S P2151



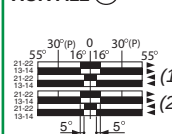
Both contacts operate in each direction

1 contact operates in each direction

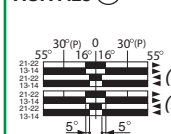
XCR A11 ⊙



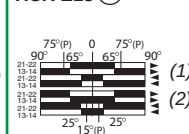
XCR A12 ⊙



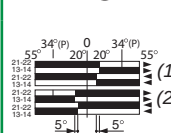
XCR A15 ⊙



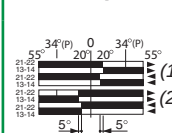
XCR E18 ⊙



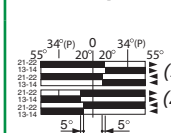
XCR B11 ⊙



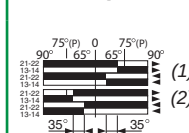
XCR B12 ⊙



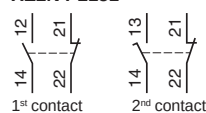
XCR B15 ⊙



XCR F17 ⊙



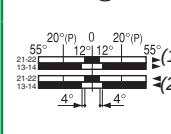
Two 2-pole 1 N/C + 1 N/O
break before make, slow break
XE2N P2151



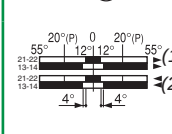
Both contacts operate in each direction

1 contact operates in each direction

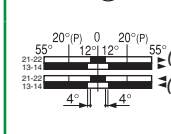
XCR A51 ⊙



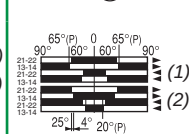
XCR A52 ⊙



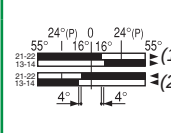
XCR A55 ⊙



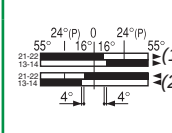
XCR E58 ⊙



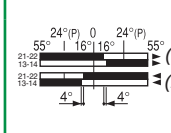
XCR B51 ⊙



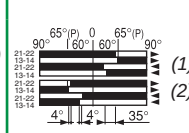
XCR B52 ⊙



XCR B55 ⊙



XCR F57 ⊙



Weight (kg)	1.110	1.145	1.155	1.135
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Contact operation

■ contact closed (P) = positive opening point
□ contact open (1) 1st contact
(2) 2nd contact

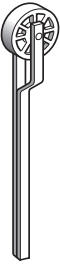
Complementary characteristics not shown under general characteristics (page 5/113)

Maximum actuation speed		1.5 m/s	
Mechanical durability		10 million operating cycles	
Minimum torque	For tripping	0.45 N.m	0.60 N.m
	For positive opening	0.75 N.m	0.70 N.m
Cable entry		1 entry tapped for n° 13 cable gland conforming to NF C 68-300 (DIN Pg 13.5) Clamping capacity 9 to 12 mm	

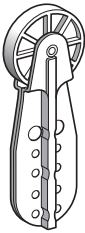
Limit switches

Osiswitch® Classic

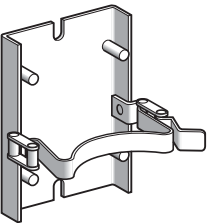
For hoisting and materials handling applications,
type XCR



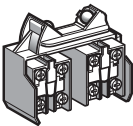
XCR Z02



XCR Z05



XCR Z09



XCR Z12

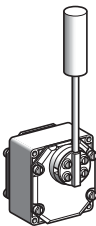
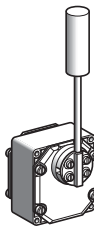
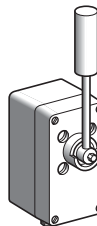
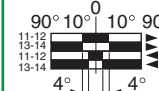
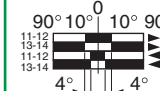
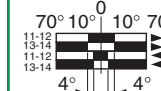
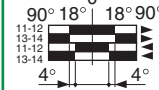
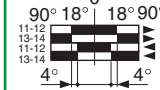
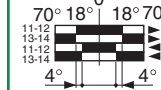
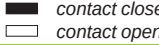
Separate components				
Description	For switches	Type	Reference	Weight kg
Rod, Ø 6 mm	XCR A XCR B	L = 200 mm	XCR Z03	0.020
		L = 300 mm	XCR Z04	0.030
Roller lever thermoplastic roller	XCR A XCR B	—	XCR Z02	0.050
Large roller lever thermoplastic roller	XCR A XCR B	—	XCR Z05	0.090
Quick fixing/release bracket	XCR A, XCR B XCR E, XCR F	—	XCR Z09	0.520
Contact block (2 contacts) with mounting plate	XCR A, XCR B XCR E, XCR F	2-pole 1 N/C + 1 N/O snap action	XCR Z12	0.135
		2-pole 1 N/C + 1 N/O break before make, slow break	XCR Z15	0.135
Description	Application	Sold in lots of	Unit reference	Weight kg
Adaptor	Pg 13.5 to ISO M20 x 1.5	5	DE9 RA13520	0.050

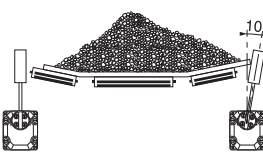
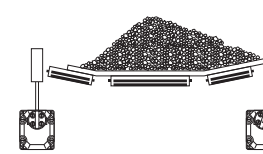
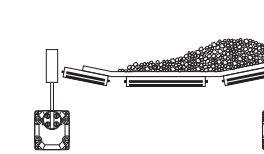
Limit switches

Osiswitch® Classic

For conveyor belt shift monitoring applications,
type XCR T

Complete switches with 1 cable entry

Type of switch	Standard	For corrosive atmospheres	
			
Features	Zinc alloy enclosure Colour: industrial blue Zinc plated steel lever, spring return to off position Cam angles: 10° and 18° Maximum displacement: 90°	Zinc alloy enclosure Colour: blue Stainless steel lever, spring return to off position Cam angles: 10° and 18° Maximum displacement: 90°	Glass reinforced polyester enclosure Colour: grey Stainless steel lever, spring return to off position Cam angles: 10° and 18° Maximum displacement: 70°
References of complete switches			
2 single-pole C/O snap action	XCR T115	XCR T215	XCR T315
1 st contact			
2 nd contact			
Weight (kg)	1.170	1.170	1.520
Contact operation			
Complementary characteristics not shown under general characteristics (page 5/113)			
Mechanical durability	0.3 million operating cycles		
Minimum tripping torque	1 N.m		
Cable entry	1 entry tapped for n° 13 cable gland conforming to NF C 68-300 (DIN Pg 13.5) Clamping capacity 9 to 12 mm		

Switch operation			
Normal position	Fault signalling	Stopping of the conveyor belt	Maximum rotation
			

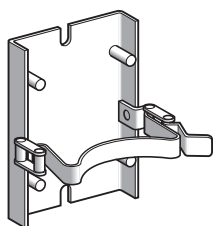
Limit switches

Osiswitch® Classic

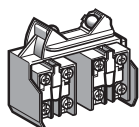
For conveyor belt shift monitoring applications,
type XCR T



XCR Z9●●



XCR Z09



XCR Z42

Separate components

Description	Type	For switches	Reference	Weight kg
Roller with lever	Zinc plated steel	XCR T115 XCR T215	XCR Z901	0.230
	Stainless steel	XCR T115 XCR T215	XCR Z902	0.230
		XCR T315	XCR Z903	0.230
Quick fixing/release bracket	–	XCR T115 XCR T215	XCR Z09	0.520
Contact block (2 contacts) with mounting plate	Single-pole C/O snap action	XCR T●15	XCR Z42	0.135

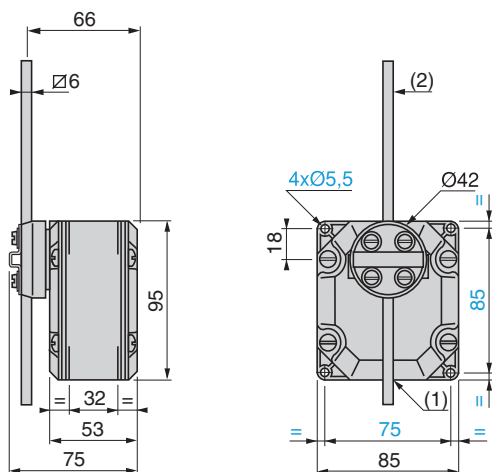
Description	Application	Sold in lots of	Unit reference	Weight kg
Adaptor	Pg 13.5 to ISO M20 x 1.5	5	DE9 RA13520	0.050

Limit switches

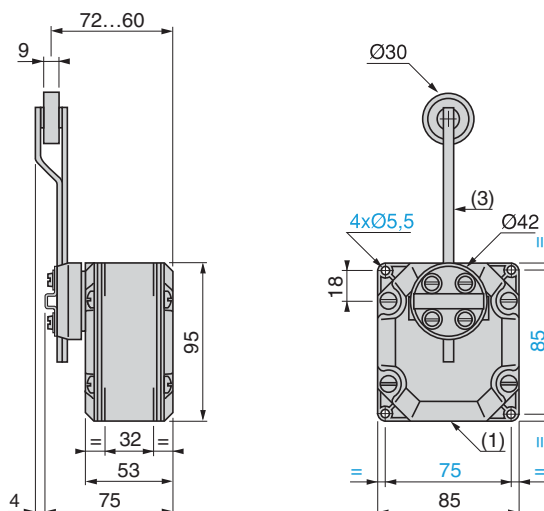
Osiswitch® Classic

For hoisting and materials handling applications,
type XCR

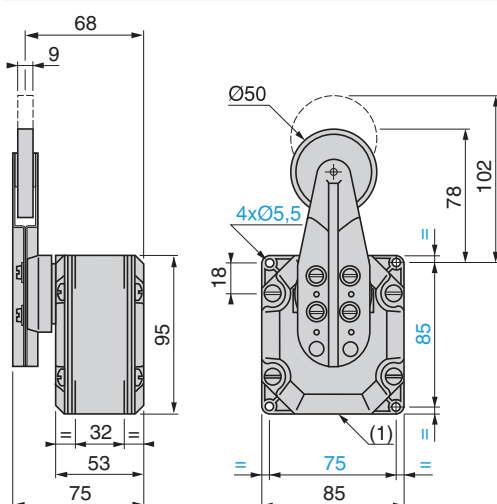
XCR A11, B11, A51, B51



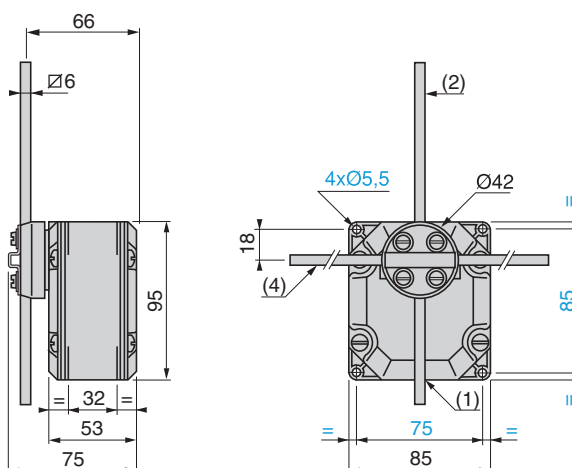
XCR A12, B12, A52, B52



XCR A15, B15, A55, B55



XCR E18, E58, F17, F57



(1) 1 tapped entry for n° 13 cable gland.

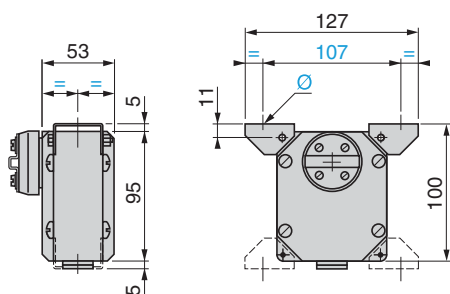
(2) Rod length: 200 mm.

(3) Rod + roller length: 160 mm.

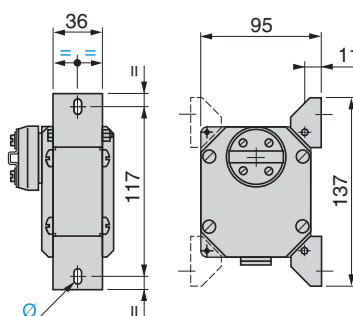
(4) Rod length: 300 mm for XCR F17 and F57, 200 mm for XCR E18 and E58.

Supplementary fixing using 2 adjustable lugs (included with switch)

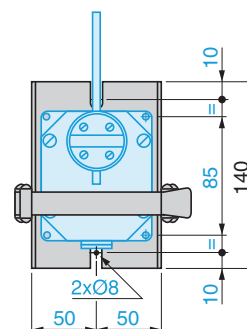
Horizontally positioned



Vertically positioned



Quick fixing/release bracket XCR Z09



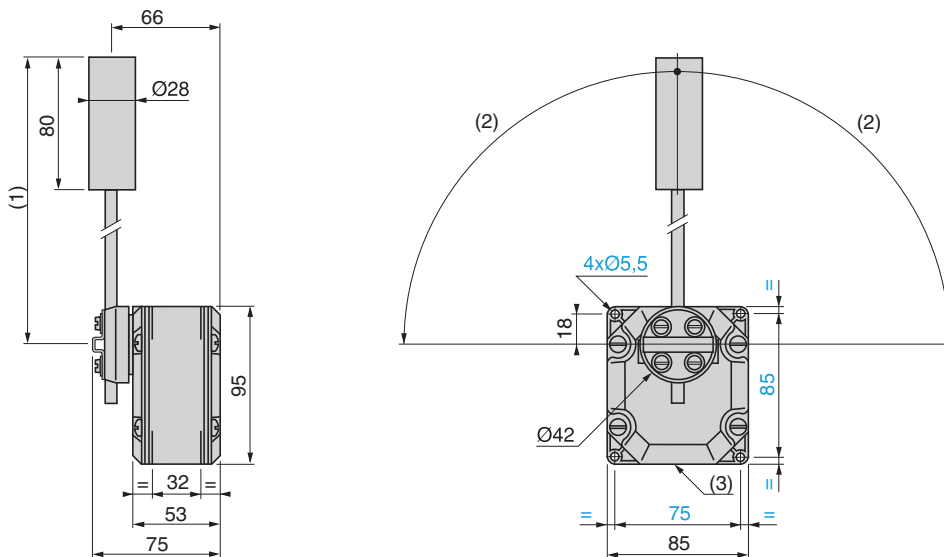
Ø: 1 elongated hole Ø 6 x 8.

Limit switches

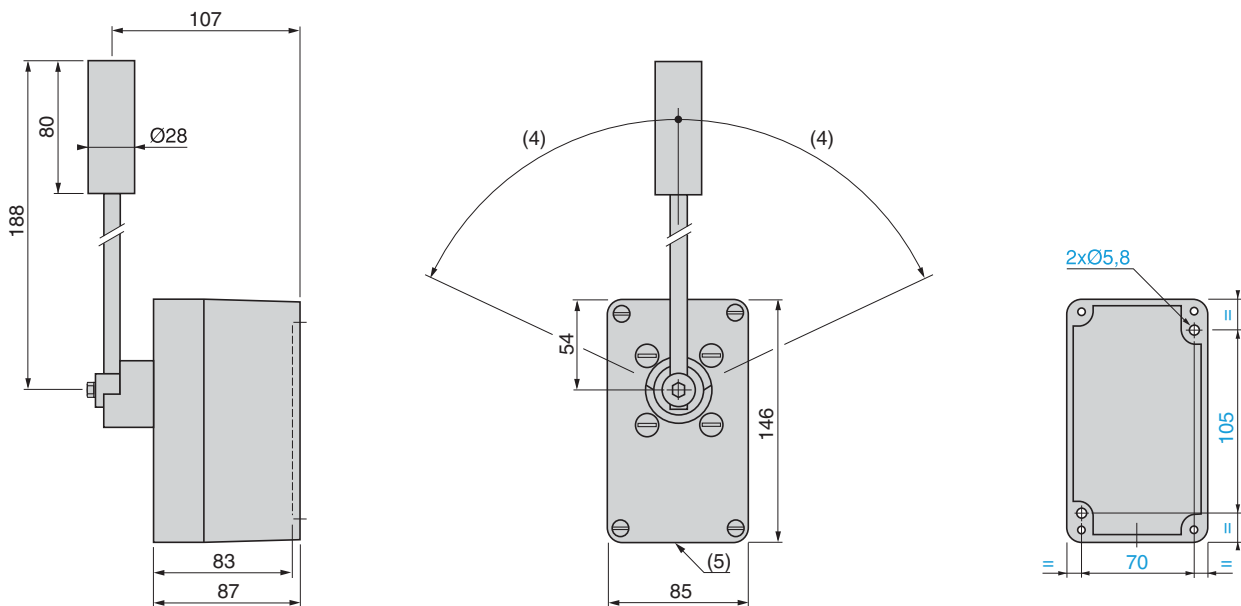
Osiswitch® Classic

For conveyor belt shift monitoring applications,
type XCR T

XCR T115, T215



XCR T315



(1) 200 max., 83 min.

(2) 90° max.

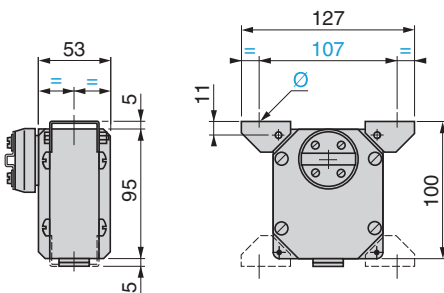
(3) 1 tapped entry for n° 13 cable gland.

(4) 70° max.

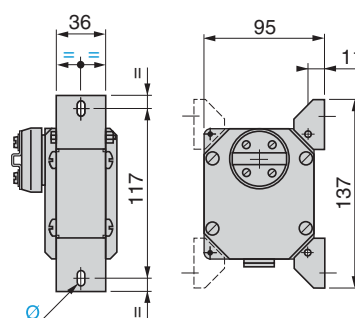
(5) 1 plain entry for n° 13 cable gland.

Supplementary fixing using 2 adjustable lugs (included with XCR T115 and T215)

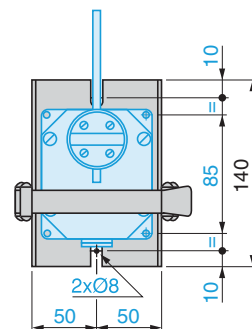
Horizontally positioned



Vertically positioned



Quick fixing/release bracket XCR Z09



Ø: 1 elongated hole Ø 6 x 8.

Limit switches

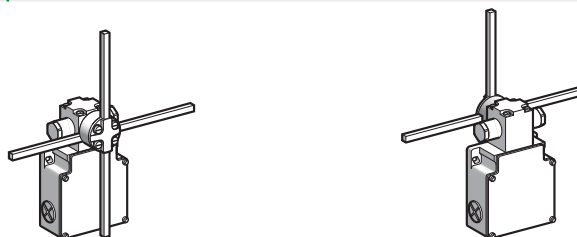
Osiswitch® Classic

For hoisting and mechanical handling applications,

type XCK MR

Complete switches with 3 cable entries

Type of operating head	Angular
------------------------	---------



Type of operator	With cruciform metal rods	With cruciform metal rods, reversed head
------------------	---------------------------	--

References for complete switches (→ N/C contact with positive opening operation on contacts 21-22)

Devices with 3 tapped cable entries ISO M20 x 1.5		
2 x 2-pole N/C + N/C break before make contacts (non interchangeable contacts)	XCK MR54D1H29 →	XCK MR54D2H29 →

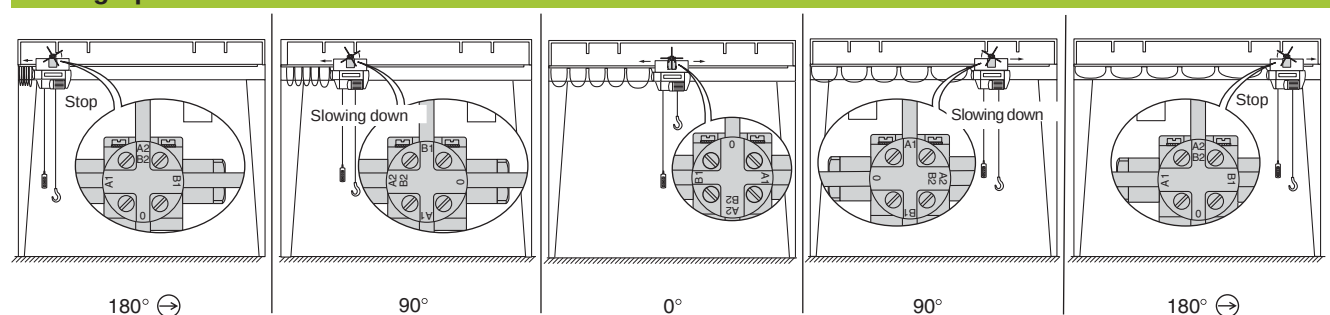
Devices with 3 cable entries for 13 mm cable gland		
2 x 2-pole N/C + N/C break before make contacts (non interchangeable contacts)	XCK MR54D1 →	XCK MR54D2 →

Weight (kg)	0.550	0.550
-------------	-------	-------

Complementary characteristics not shown under general characteristics (page 5/123)

Switch actuation	Lateral
Maximum actuation speed	1.5 m/s
Mechanical durability	2 million operating cycles
Minimum torque	For tripping For positive opening
	0.5 N.m 0.75 N.m
Accuracy	± 0.3 mm
Cable entry	3 tapped entries ISO M20 x 1.5, clamping capacity 7 to 13 mm 3 tapped entries for 13 mm cable gland conforming to NF C 68-300 (DIN Pg 13.5), clamping capacity 9 to 12 mm

Setting-up



(A)					11-12 21-22
(B)					11-12 21-22

Direction ▽ of rotation A1 B1 A2 B2 0 21 22 21 22 11 12 11 12 Contact (A) Contact (B)	Direction ▽ of rotation B1 B2 A1 0 21 22 21 22 11 12 11 12 Contact (A) Contact (B)	Reference mark ▽ on head (1) 0 B1 A1 B2 A2 21 22 21 22 11 12 11 12 Contact (A) Contact (B)	Direction ▽ of rotation A1 A2 0 B2 21 22 21 22 11 12 11 12 Contact (A) Contact (B)	Direction ▽ of rotation A1 B1 A2 B2 0 21 22 21 22 11 12 11 12 Contact (A) Contact (B)
--	--	---	--	--

(1) Triangle symbol marked on top of operating head

Limit switches

Osiswitch® Classic
For hoisting and mechanical handling applications,
type XCK MR
Complete switches with 3 cable entries

References for separate parts



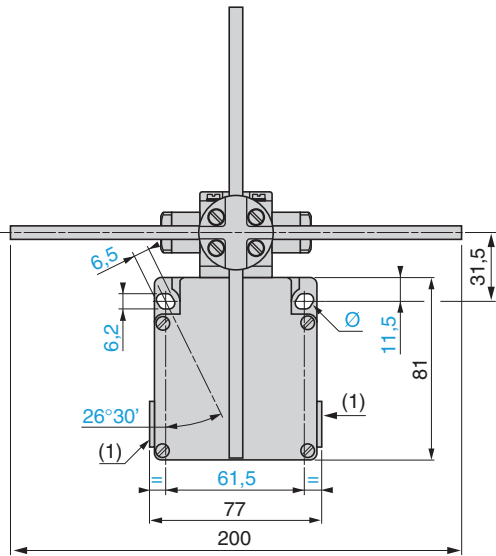
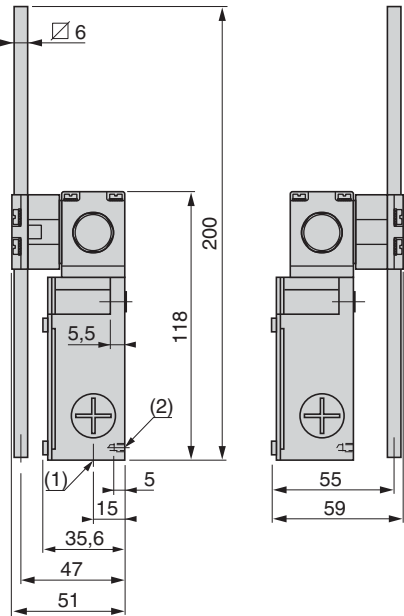
XCR Z03

Description	Reference	Weight kg
Rod $\varnothing$ 6 mm, L = 200 mm	XCR Z03	0.020

Dimensions

XCK MR54D1H29
XCK MR54D1

XCK MR54D2H29
XCK MR54D2



- (1) XCK MR54D●H29 = 3 tapped entries ISO M20 x 1.5.
XCK MR54D● = 3 tapped entries for n°13 cable gland.
(2) 2 centring holes $\varnothing$ 3.9 $\pm$ 0.2, for cover fixing screws alignment.
 $\varnothing$: 2 elongated holes 6.2 x 6.5, inclined at 26°30' for M5 screws.

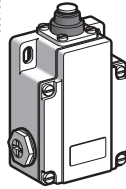
Limit switches

For materials handling applications,
type XC1 AC

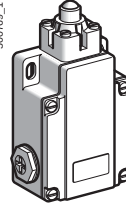
■ XC1 AC
with slow break contacts

□ With head for linear movement (plunger)

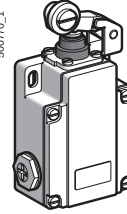
500768_1



500769_1

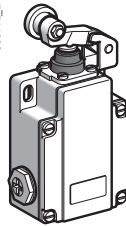


500770_1

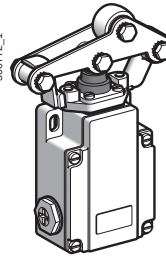


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500771_1



500772_1

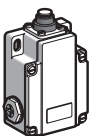
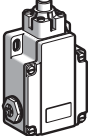
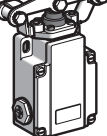
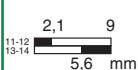
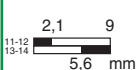
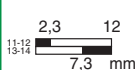
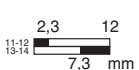
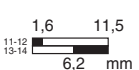
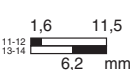
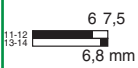
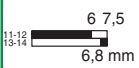
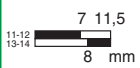
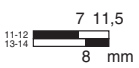
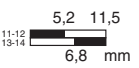
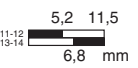
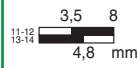
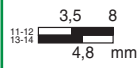
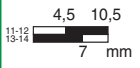
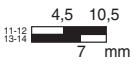
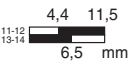
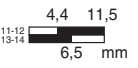
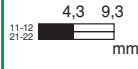
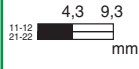
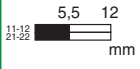
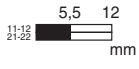
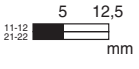
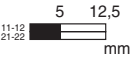
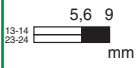
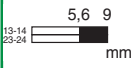
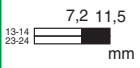
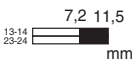
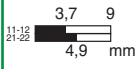
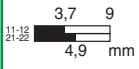
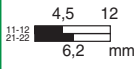
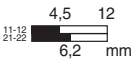
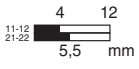
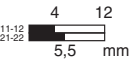
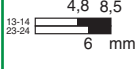
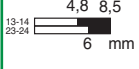
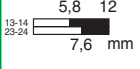
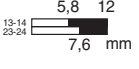
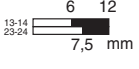
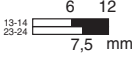


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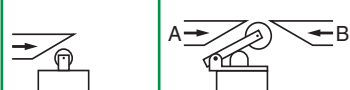
Environment characteristics	
Conformity to standards	IEC/EN 60947-5-1, IEC 60337-1, VDE 0660-200, CSA C22-2 n° 14
Product certifications	Special version CSA 600 V (ac) HD
Protective treatment	Version Standard "TC", special "TH"
Ambient air temperature	For operation - 25...+ 70 °C
	For storage - 40...+ 70 °C
Operating position	All positions
Vibration resistance	9 gn (10...500 Hz) conforming to IEC 60068-2-6
Shock resistance	95 gn (11 ms) conforming to IEC 60068-2-27
Electric shock protection	Class I conforming to IEC 60536 and NF C 20-030
Degree of protection	IP 65 conforming to IEC 60529 and NF C 20-010
Mechanical durability	10 million operating cycles
Cable entry	3 tapped entries for n° 13 cable gland
Contact block characteristics	
Conventional thermal current	10 A
Rated insulation voltage	Slow break contact blocks ~ 500 V and ~ 600 V conforming to IEC 60947-5-1, NF C 20-040 ~ and ~ 600 V conforming to CSA C22-2 n° 14
Resistance across terminals	≤ 8 mΩ
Minimum tripping force	XC1 AC1●1 : 33 N, XC1 AC1●6 : 23 N, XC1 AC1●7 : 29 N
Terminal referencing	Conforming to CENELEC EN 50013
Short-circuit protection	10 A cartridge fuse type gG (gl)
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
Slow break contact blocks	
a.c. supply ~ 50/60 Hz  inductive circuit	Power broken in VA
	Voltage V
	For 1 million operating cycles
	For 3 million operating cycles
d.c. supply ~  inductive circuit	Power broken in W
	Voltage V
	For 1 million operating cycles
	For 3 million operating cycles

Limit switches

For materials handling applications,
type XC1 AC
Complete switches with slow break contacts

Type of head	Plunger					
						
Type of operator	End plunger	End ball bearing plunger	Roller lever	Offset roller lever	Reinforced roller lever	Roller lever on needle roller bearing
References of complete switches						
Single pole C/O slow break ZC1 AZ11	XC1 AC111 	XC1 AC115 	XC1 AC116 	XC1 AC118 	XC1 AC117 	XC1 AC119 
2-pole N/C + N/O break before make, slow break ZC1 AZ12	XC1 AC121 	XC1 AC125 	XC1 AC126 	XC1 AC128 	XC1 AC127 	XC1 AC129 
2-pole N/O + N/C make before break, slow break ZC1 AZ13	XC1 AC131 	XC1 AC135 	XC1 AC136 	XC1 AC138 	XC1 AC137 	XC1 AC139 
2-pole N/C + N/C simultaneous, slow break ZC1 AZ14	XC1 AC141 	XC1 AC145 	XC1 AC146 	XC1 AC148 	XC1 AC147 	XC1 AC149 
2-pole N/O + N/O simultaneous, slow break ZC1 AZ15	XC1 AC151 	XC1 AC155 	XC1 AC156 	XC1 AC158 	XC1 AC157 	XC1 AC159 
2-pole N/C + N/C staggered, slow break ZC1 AZ16	XC1 AC161 	XC1 AC165 	XC1 AC166 	XC1 AC168 	XC1 AC167 	XC1 AC169 
2-pole N/O + N/O staggered, slow break ZC1 AZ17	XC1 AC171 	XC1 AC175 	XC1 AC176 	XC1 AC178 	XC1 AC177 	XC1 AC179 
Weight (kg)	0.530	0.530	0.595	0.595	0.870	0.870
Contact operation	 contact closed  contact open					

Complementary characteristics not shown under general characteristics (page 5/123)

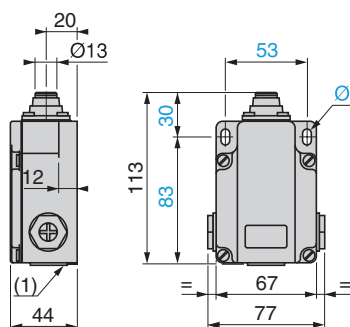
Switch actuation	On end	By 30° cam
Type of actuation		
Maximum actuation speed	0.5 m/s	1 m/s (direction A), 0.5 m/s (direction B) (1)
Cable entry	3 tapped entries for n° 13 (DIN Pg 13.5) cable gland, clamping capacity 9 to 12 mm (2 entries fitted with blanking plug)	
Connection	Screw terminals. Clamping capacity: min 1 x 0.5 mm ² , max 1 x 2.5 mm ²	

(1) For a 45° cam the maximum actuation speed becomes 0.5 m/s and for a 15° cam, 1 m/s.

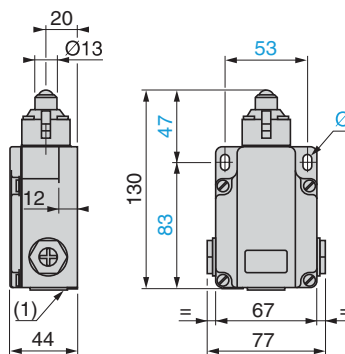
Limit switches

For materials handling applications,
type XC1 AC
Complete switches with slow break contacts

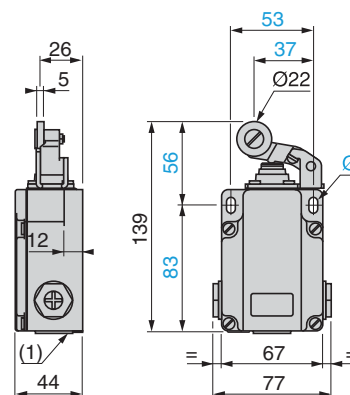
XC1 AC1●1



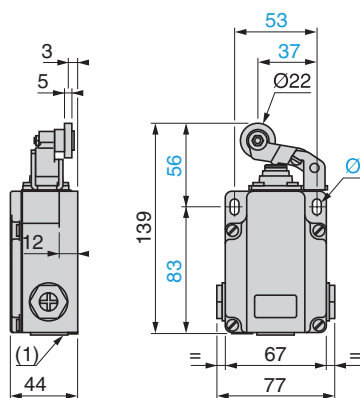
XC1 AC1●5



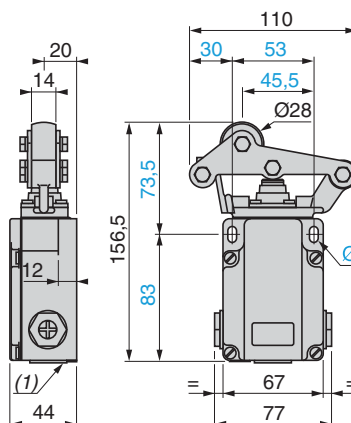
XC1 AC1●6



XC1 AC1●8



XC1 AC1●7, XC1 AC1●9



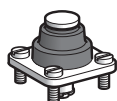
(1) 3 tapped entries for n° 13 cable gland or ISO 20 with adaptor DE9 RA1620.
Ø: 2 elongated holes Ø 6.5 x 10.

Limit switches

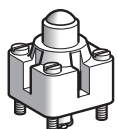
For materials handling applications,

type XC1 AC

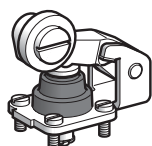
Replacement parts



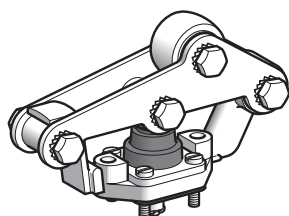
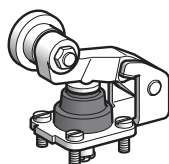
ZC1 AC001



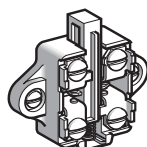
ZC1 AC005



ZC1 AC006

ZC1 AC007
ZC1 AC009

ZC1 AC008



ZC1 AZ1

Plunger heads

Type of operator	Maximum actuation speed	Type of actuation	Reference	Weight kg
For actuation on end				
End plunger	0.5 m/s		ZC1 AC001	0.035
For actuation by 30° cam				
End ball bearing plunger	0.5 m/s		ZC1 AC005	0.050
Roller lever	1 m/s (direction A) 0.5 m/s (direction B)		ZC1 AC006	0.100
Reinforced roller lever	1 m/s (direction A) 0.5 m/s (direction B)		ZC1 AC007	0.375
Offset roller lever	1 m/s (direction A) 0.5 m/s (direction B)		ZC1 AC008	0.100
Roller lever on needle roller bearing	1 m/s (direction A) 0.5 m/s (direction B)		ZC1 AC009	3.380

Contact blocks

Type of contact	Scheme	Reference	Weight kg
C/O, single pole		ZC1 AZ11	0.040
N/C + N/O break before make		ZC1 AZ12	0.045
N/O + N/C make before break		ZC1 AZ13	0.040
N/C + N/C simultaneous		ZC1 AZ14	0.045
N/O + N/O simultaneous		ZC1 AZ15	0.045
N/C + N/C staggered		ZC1 AZ16	0.040
N/O + N/O staggered		ZC1 AZ17	0.040

Adaptation plate

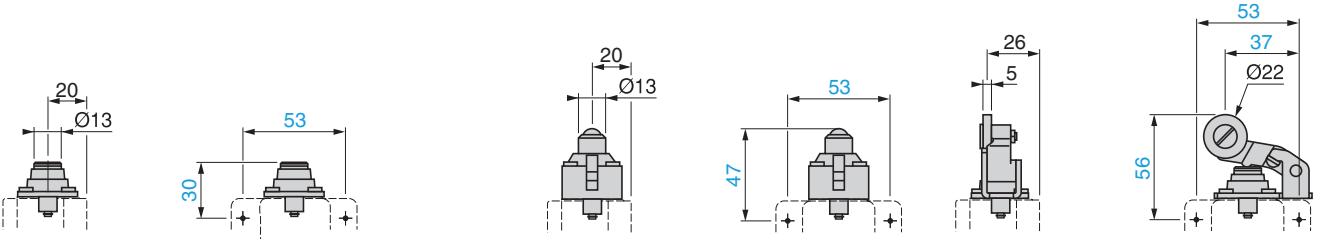
Description	Reference	Weight kg
Mounting plate (For replacing an old version type RN-67522 limit switch by an XC1-AC limit switch)	ZC1 AZ8	3.380

Limit switches

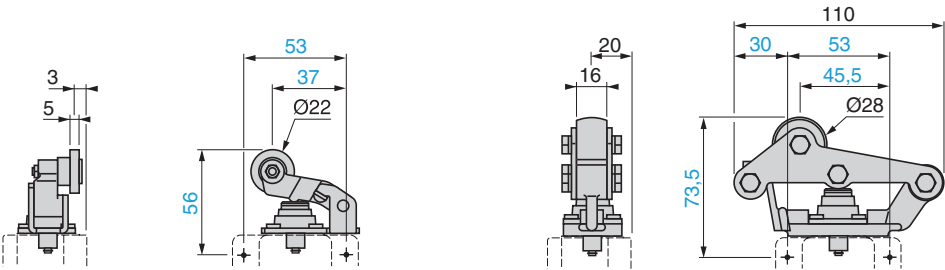
For materials handling applications,
type XC1 AC
Replacement parts

Dimensions

ZC1 AC001	ZC1 AC005	ZC1-AC006
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ZC1 AC008	ZC1 AC007, AC009
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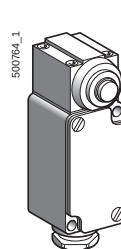
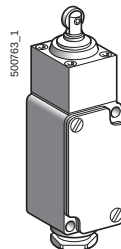
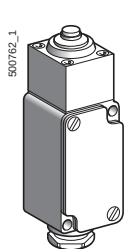
Limit switches

Osiswitch® Application

For very severe applications, type XC2 J

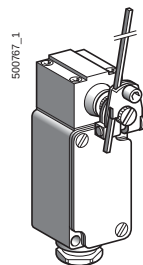
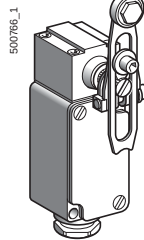
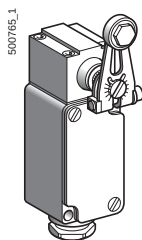
■ XC2 J
with 1 cable entry

□ With head for linear movement (plunger)



Page 5/140

□ With head for rotary movement (lever)



Page 5/140

Environment characteristics

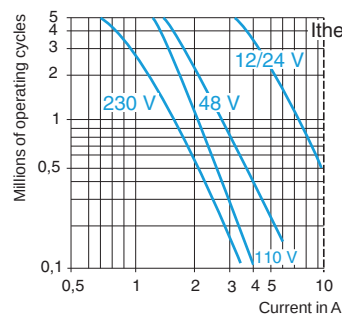
Conformity to standards	Products	IEC/EN 60947-5-1, IEC 60337-1, VDE 0660-200, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC/EN 60204-1, NF C 79-130
Product certifications	Standard version	DEMKO, NEMKO, CSA 300 V ~ HD, ~ 60 W
	Special version	UL 250 V ~ HD Listed, CSA 300 V ~ HD, 60 W with 1/2" NPT tapped cable entry
Protective treatment	Standard version	"TC"
Ambient air temperature	For operation	- 25...+ 70 °C. Special adaptable sub-assemblies: - 40 °C or + 120 °C
	For storage	- 40...+ 70 °C
Vibration resistance		10 gn (10...500 Hz) conforming to IEC 60068-2-6
Shock resistance		25 gn (18 ms) conforming to IEC 60068-2-27
Electric shock protection		Class I conforming to IEC 60536 and NF C 20-030
Degree of protection		IP 65 conforming to IEC 60529, IP 657 conforming to NF C 20-010
Repeat accuracy		0.01 mm on the tripping points, with 1 million operating cycles for head with end plunger
Cable entry		1 entry incorporating cable gland. Clamping capacity: 6...13.5 mm

Contact block characteristics

Rated operational characteristics		~ AC-15; A300 (Ue = 240 V, Ie = 3 A) ~ DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage		500 V conforming to IEC 60947-5-1, group C conforming to NF C 20-040, 300 V conforming to CSA C22-2 n° 14
Resistance across terminals		≤ 25 mΩ conforming to NF C 93-050 method A or IEC 60255-7 category 3
Short-circuit protection		10 A cartridge fuse type gG (gl)
Connection	Screw clamp terminals	XCK Z01: clamping capacity, min: 1 x 0.5 mm², max: 2 x 2.5 mm² XES P101: clamping capacity, min: 1 x 0.75 mm², max: 2 x 1.5 mm²
Minimum actuation speed		1 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

XCK Z01, XES P1021, XES P1031

a.c. supply
~ 50/60 Hz
~ inductive circuit



d.c. supply ~

Voltage V	24	48	120
Power broken in W for 5 million operating cycles	10	7	4
W ~			

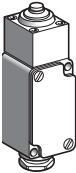
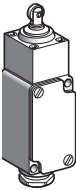
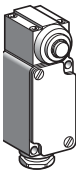
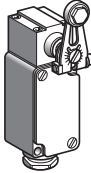
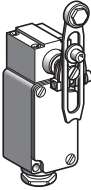
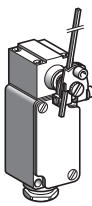
Limit switches

Osiswitch® Application

For very severe applications, type XC2 J

Complete switches, fixed body,

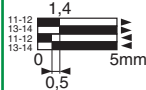
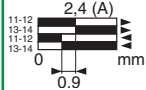
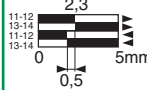
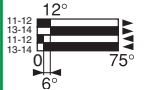
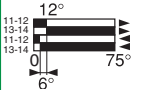
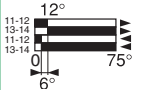
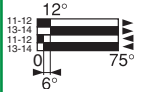
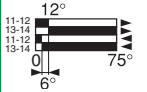
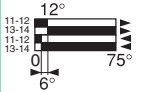
1 cable entry incorporating cable gland

Type of head	Plunger			Rotary		
						
Type of operator	Metal end plunger	Steel roller plunger	Metal side plunger	Thermoplastic roller lever (1)	Variable length thermoplastic roller lever (1)	Steel rod lever $\varnothing$ 3 mm (1)

(1) Adjustable throughout 360°.

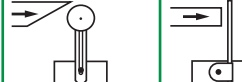
References

Single pole C/O
snap action XCK Z01


	Actuation from left AND right					
	ZC2 JC1 + ZC2 JE61	ZC2 JC1 + ZC2 JE62	ZC2 JC1 + ZC2 JE63	ZC2 JC1 + ZC2 JE01 + ZC2 JY11	ZC2 JC1 + ZC2 JE01 + ZC2 JY31	ZC2 JC1 + ZC2 JE01 + ZC2 JY51
						
	Actuation from left OR right					
	ZC2 JC1 + ZC2 JE05 + ZC2 JY11	ZC2 JC1 + ZC2 JE05 + ZC2 JY31	ZC2 JC1 + ZC2 JE05 + ZC2 JY51			
						
Weight (kg)	0.555	0.560	0.600	0.605	0.620	0.605
Contact operation	 contact closed  contact open					

(A) = cam displacement

Complementary characteristics not shown under general characteristics (page 5/139)

Switch actuation	On end	By 30° cam	On end	By 30° cam	By any moving part
Type of actuation					
Maximum actuation speed	0.5 m/s			1.5 m/s	
Mechanical durability (in millions of operating cycles)	30	25	30		
Minimum tripping force or torque	18 N		26 N	With head ZC2 JE01: 0.30 N.m With head ZC2 JE05: 0.20 N.m	
Cable entry	1 tapped entry incorporating metal cable gland. Clamping capacity 6 to 13.5 mm				

Other versions

Switches with gold flashed contacts. Special protective treatments.
Please consult your Regional Sales Office.

Limit switches

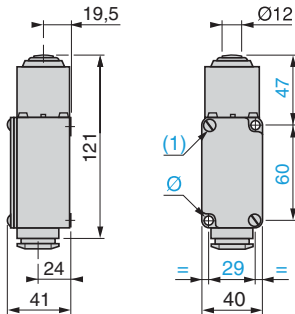
Osiswitch® Application

For very severe applications, type XC2 J

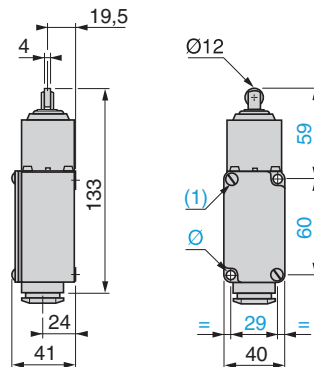
Complete switches, fixed body,

1 cable entry incorporating cable gland

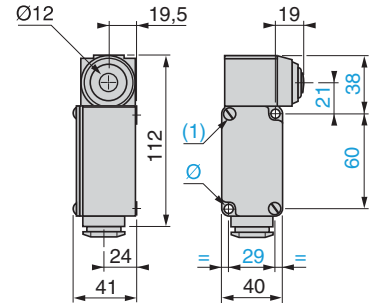
ZC2 JC1 + ZC2 JE61



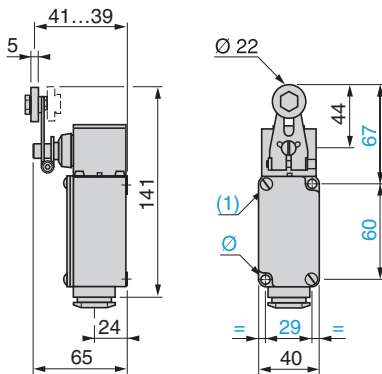
ZC2 JC1 + ZC2 JE62



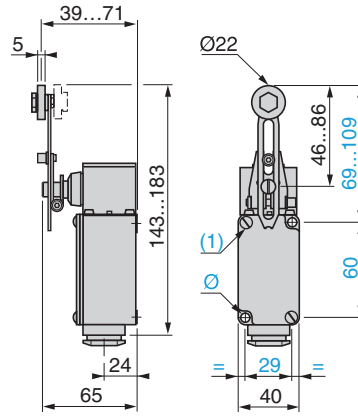
ZC2 JC1 + ZC2 JE63



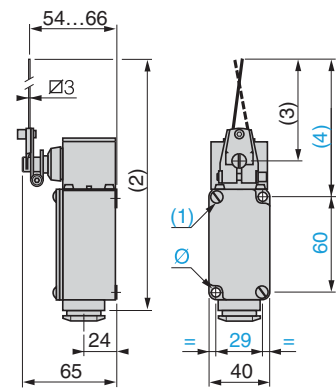
ZC2 JC1 + ZC2 JE0● + ZC2 JY11



ZC2 JC1 + ZC2 JE0● + ZC2 JY31



ZC2 JC1 + ZC2 JE0● + ZC2 JY51



(1) Fixing from the rear: by 2 M5 screws.

Depth of thread on switch: 10 mm.

(2) 222 max.

(3) 125 max.

(4) 148 max.

Ø: Fixing from the front via 2 holes Ø 5.5.

Cable gland incorporated (all XC2 JC models).

Limit switches

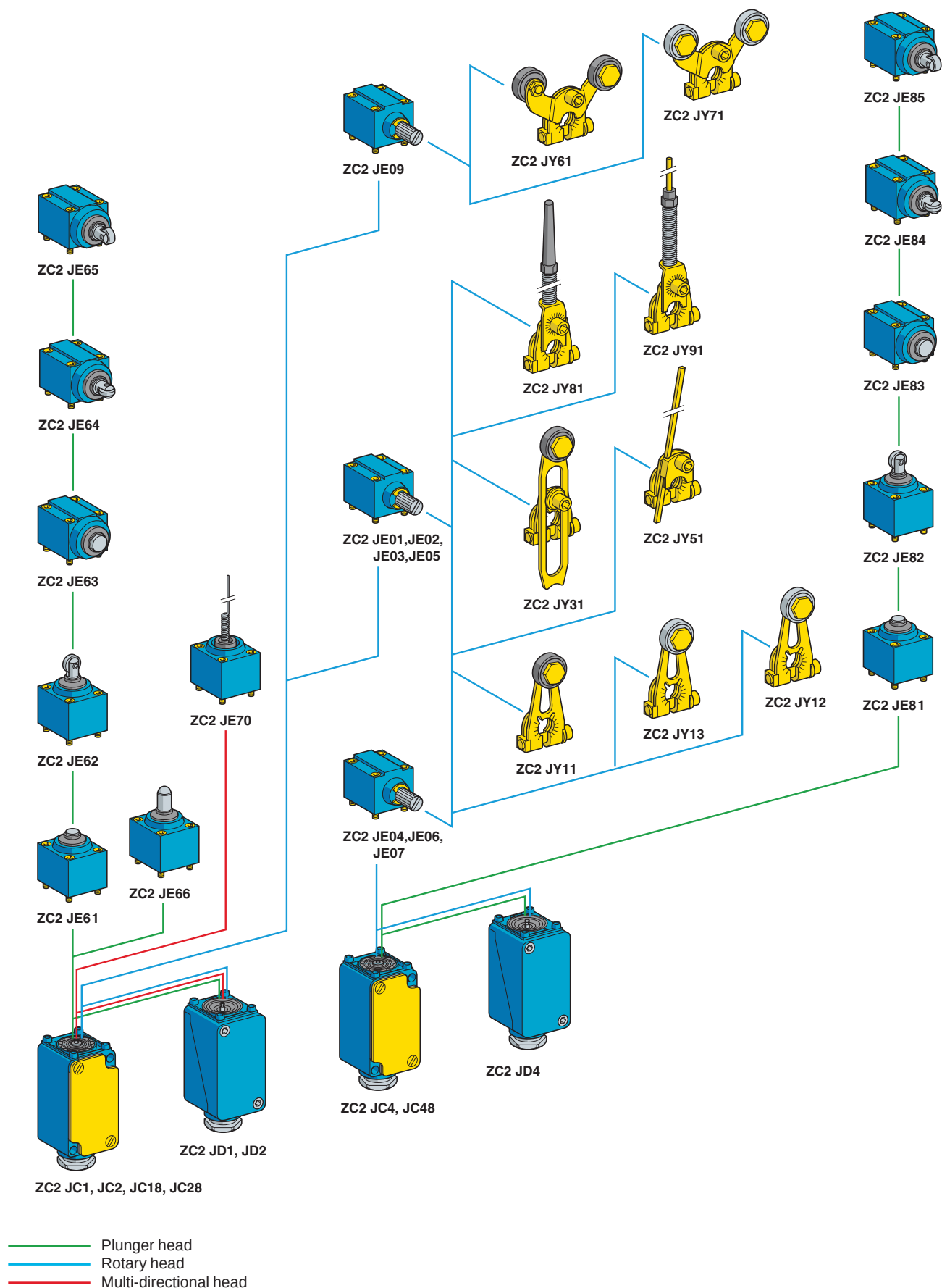
Osiswitch® Application

For very severe applications, type XC2 J

Fixed or plug-in body

Variable composition

5



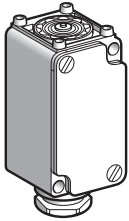
Limit switches

Osiswitch® Application

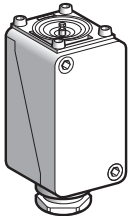
For very severe applications, type XC2 J

Fixed or plug-in body

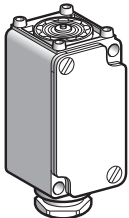
Adaptable sub-assemblies



ZC2 JC●



ZC2 JD●



ZC2 JC●8

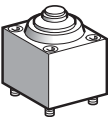
Bodies with contacts for plunger or rotary head

Type	With contact block	Scheme	Reference	Weight kg
Fixed bodies				
1 step	Single-pole 1 C/O snap action (XCK Z01)		ZC2 JC1	0.355
	Double-pole 2 C/O simultaneous snap action (XES P1021)		ZC2 JC2	0.355
2 step	Double-pole 2 C/O staggered snap action (XES P1031)		ZC2 JC4	0.355
Plug-in bodies				
1 step	Single-pole 1 C/O snap action		ZC2 JD1	0.380
	Double-pole 2 C/O simultaneous snap action		ZC2 JD2	0.380
2 step	Double-pole 2 C/O staggered snap action		ZC2 JD4	0.380

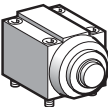
Bodies incorporating gold flashed contacts, for plunger or rotary head

Type	With contact block	Scheme	Reference	Weight kg
Fixed bodies				
1 step	Single-pole 1 C/O snap action (XCK Z018)		ZC2 JC18	0.355
	Double-pole 2 C/O simultaneous snap action (XES P1028)		ZC2 JC28	0.360
2 step	Double-pole 2 C/O staggered snap action (XES P1038)		ZC2 JC48	0.360

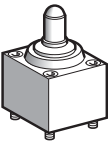
Limit switches
Osiswitch® Application
For very severe applications, type XC2 J
Fixed or plug-in body
Adaptable sub-assemblies



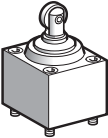
ZC2 JE1



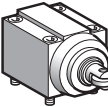
ZC2 JE3



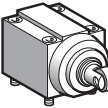
ZC2 JE66



ZC2 JE2



ZC2 JE4



ZC2 JE5

Plunger heads				
Type of operator	Compatible bodies	Maximum actuation speed	Reference	Weight kg
For actuation on end				
End plunger metal	ZC2 J1	0.5 m/s	ZC2 JE61	0.195
	ZC2 J2			
	ZC2 J4	0.5 m/s	ZC2 JE81	0.195
Side plunger metal	ZC2 J1	0.5 m/s	ZC2 JE63	0.240
	ZC2 J2			
	ZC2 J4	0.5 m/s	ZC2 JE83	0.240
For actuation by 30° cam				
End ball bearing plunger	ZC2 J1	0.1 m/s	ZC2 JE66	0.205
	ZC2 J2			
	ZC2 J4	0.1 m/s	ZC2 JE86	0.205
End roller plunger steel	ZC2 J1	1 m/s	ZC2 JE62	0.200
	ZC2 J2			
	ZC2 J4	1 m/s	ZC2 JE82	0.200
Side plunger with horizontal roller steel	ZC2 J1	0.6 m/s	ZC2 JE64	0.245
	ZC2 J2			
	ZC2 J4	0.6 m/s	ZC2 JE84	0.245
Side plunger with vertical roller steel	ZC2 J1	0.6 m/s	ZC2 JE65	0.245
	ZC2 J2			
	ZC2 J4	0.6 m/s	ZC2 JE85	0.245

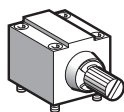
Limit switches

Osiswitch® Application

For very severe applications, type XC2 J

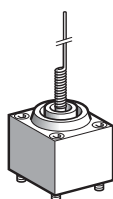
Fixed or plug-in body

Adaptable sub-assemblies



ZC2 JE01

Rotary heads (without operating lever)				
Type	Compatible bodies	Maximum actuation speed	Reference	Weight kg
Spring return				
Actuation from left AND right	ZC2 J●1	1.5 m/s	ZC2 JE01	0.210
	ZC2 J●2			
	ZC2 J●4	1.5 m/s	ZC2 JE04	0.210
Actuation from right	ZC2 J●1	1.5 m/s	ZC2 JE02	0.210
	ZC2 J●2			
	ZC2 J●4	1.5 m/s	ZC2 JE06	0.210
Actuation from left	ZC2 J●1	1.5 m/s	ZC2 JE03	0.210
	ZC2 J●2			
	ZC2 J●4	1.5 m/s	ZC2 JE07	0.210
Actuation from left OR right (see page 5/198)	ZC2 J●1	1.5 m/s	ZC2 JE05	0.210
	ZC2 J●2			
Stay put (see page 5/198)				
Actuation from left AND right	ZC2 J●1	1.5 m/s	ZC2 JE09	0.210
	ZC2 J●2			



ZC2 JE70

Multi-directional head (with operator)				
Type of operator	Compatible bodies	Maximum actuation speed	Reference	Weight kg
For actuation by any moving part				
"Cat's whisker"	ZC2 J●1	1 m/s in any direction	ZC2 JE70	0.190
	ZC2 J●2			

Limit switches

Osiswitch® Application

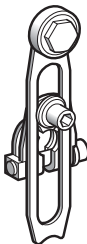
For very severe applications, type XC2 J

Fixed or plug-in body

Adaptable sub-assemblies



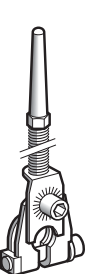
ZC2 JY1●



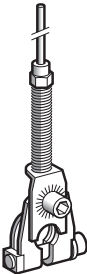
ZC2 JY31



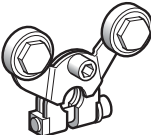
ZC2 JY51



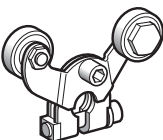
ZC2 JY81



ZC2 JY91



ZC2 JY71



ZC2 JY61

Operating levers for rotary heads

Description	Reference	Weight kg
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For actuation by 30° cam

Roller lever (1)	Thermoplastic	ZC2 JY11	0.030
	Steel	ZC2 JY13	0.040
	Steel, ball bearing mounted	ZC2 JY12	0.040

Variable length roller lever (1)	Thermoplastic	ZC2 JY31	0.045
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For actuation by any moving part

Rigid rod lever	Steel $\varnothing$ 3 mm, L = 125 mm (1)	ZC2 JY51	0.035
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Spring lever (1)		ZC2 JY81	0.040
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Spring-rod lever (1)		ZC2 JY91	0.040
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For actuation by specific cam (only for operation with head ZC2 JE09, see page 5/198)

Forked arm with rollers thermoplastic (1)	1 track	ZC2 JY71	0.055
	2 track	ZC2 JY61	0.055

(1) Adjustable throughout 360°.

Other versions Other operating levers for rotary heads.
Please consult your Regional Sales Office.

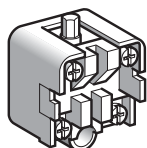
Limit switches

Osiswitch® Application

For very severe applications, type XC2 J

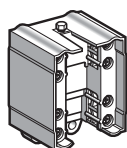
Fixed or plug-in body

Adaptable sub-assemblies



XCK Z01

Contact blocks				
Type of contact	Scheme	For body	Reference	Weight kg
Single-pole 1 C/O snap action		ZC2 JC1	XCK Z01	0.050
Double-pole 2 C/O simultaneous snap action		ZC2 JC2	XES P1021	0.045
Double-pole 2 C/O staggered snap action		ZC2 JC4	XES P1031	0.045



XES P101

Contact blocks with gold flashed contacts				
Type of contact	Scheme	For body	Reference	Weight kg
Single-pole 1 C/O snap action		ZC2 JC18	XCK Z018	0.050
Double-pole 2 C/O simultaneous snap action		ZC2 JC28	XES P1028	0.055
Double-pole 2 C/O staggered snap action		ZC2 JC48	XES P1038	0.055

Limit switches

Osiswitch® Application

For very severe applications, type XC2 J

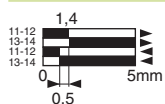
Fixed or plug-in body

Adaptable sub-assemblies

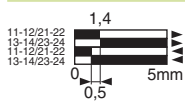
Operation (function diagrams)

Heads ZC2 JE61, JE66 with body

ZC2 J•1

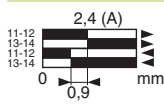


ZC2 J•2

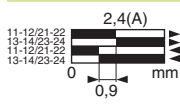


Head ZC2 JE62 with body

ZC2 J•1

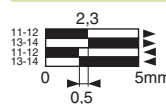


ZC2 J•2

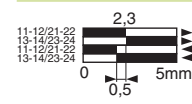


Head ZC2 JE63 with body

ZC2 J•1

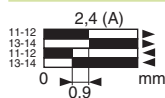


ZC2 J•2

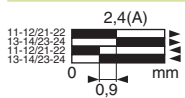


Heads ZC2 JE64, JE65 with body

ZC2 J•1

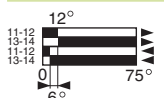


ZC2 J•2

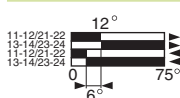


Heads ZC2 JE01, JE02, JE03, JE05 with body

ZC2 J•1

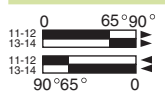


ZC2 J•2

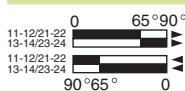


Head ZC2 JE09 with body

ZC2 J•1

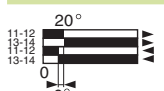


ZC2 J•2

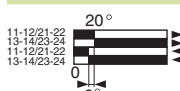


Head ZC2 JE70 with body

ZC2 J•1



ZC2 J•2



Contact operation

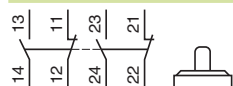
■ contact closed

□ contact open

(A) = cam displacement

Heads ZC2 JE81, JE82 with body ZC2 J•4

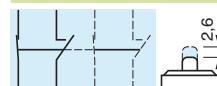
Unactuated



1st step

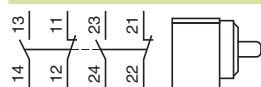


2nd step



Heads ZC2 JE83, JE84, J85 with body ZC2 J•4

Unactuated



1st step

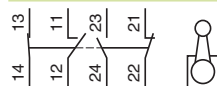


2nd step



Heads ZC2 JE04 with body ZC2 J•4

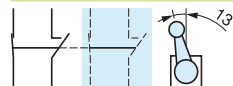
Unactuated



Actuated from left



Actuated from right



Heads ZC2 JE06, JE07 with body ZC2 J•4

Unactuated



1st step



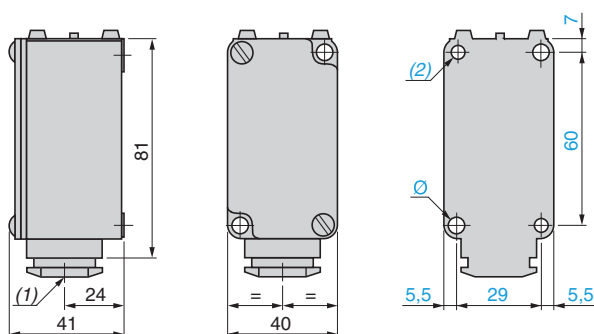
2nd step



Dimensions

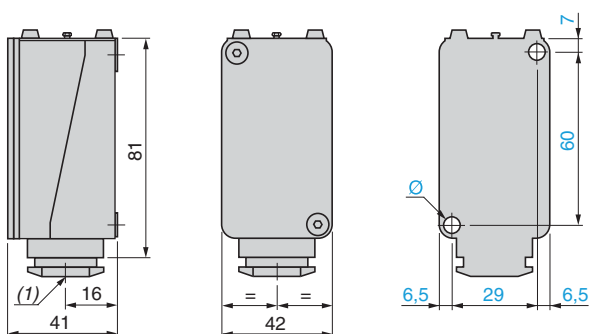
Fixed bodies

ZC2 JC1, JC2, JC4



Plug-in bodies

ZC2 JD1, JD2, JD4



(1) Incorporated cable gland

(2) Fixing from the rear by 2 M5 screws, depth of thread on switch: 10 mm

Ø: fixing from the front via 2 holes Ø 5,5

(1) Incorporated cable gland

Ø: fixing from the rear by 2 M6 screws

Fixing from the front via 2 holes Ø 5,5 (remove front part of switch for access)

Limit switches

Osiriswitch® Application

For very severe applications, type XC2 J

Fixed or plug-in body

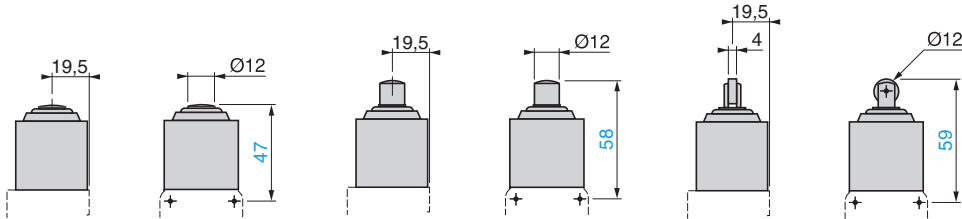
Adaptable sub-assemblies

Plunger heads

ZC2 JE61, JE81

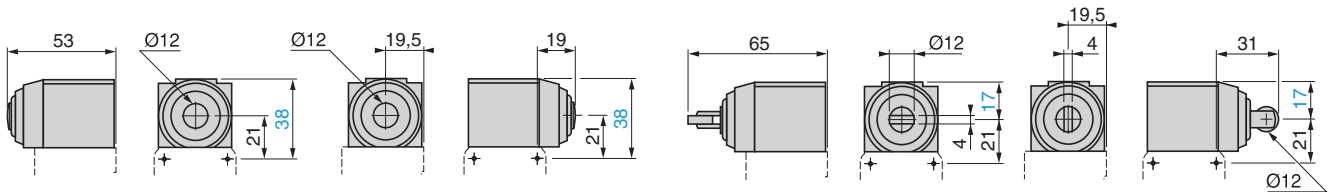
ZC2 JE66

ZC2 JE62, JE82



ZC2 JE63, JE83 (2 position)

ZC2 JE64, JE84, JE65, JE85 (2 position)

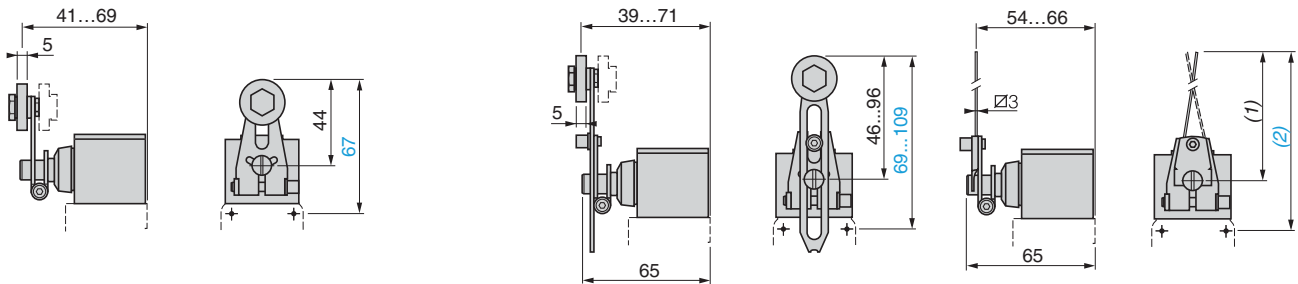


Rotary heads (ZC2 JE01 to JE07) with operating lever

ZC2 JY11, JY12, JY13

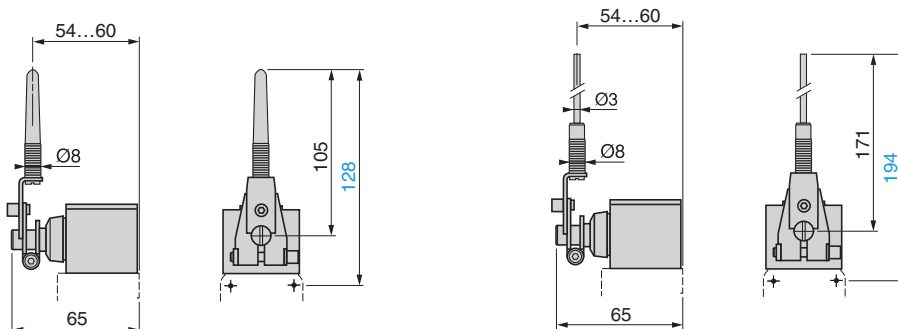
ZC2 JY31

ZC2 JY51



ZC2 JY81

ZC2 JY91



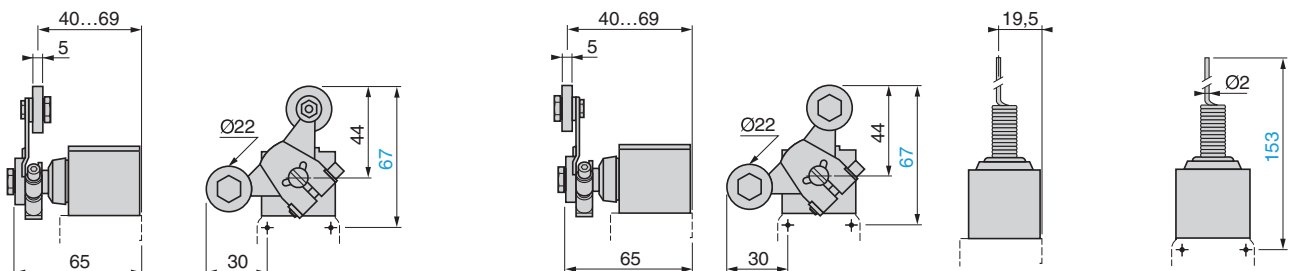
Rotary heads (ZC2-JE09) with operating lever

ZC2 JY61

ZC2 JY71

Multi-directional heads

ZC2 JE70

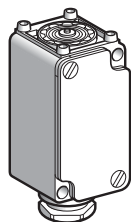


Limit switches

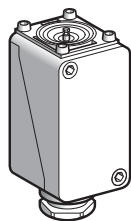
Osiswitch® Application

For very severe applications, type XC2 J

Fixed or plug-in body. Adaptable sub-assemblies for low temperature applications (- 40 °C)



ZC2 JC●6



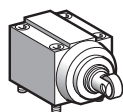
ZC2 JD●6

Bodies with contacts for plunger or rotary head

Type	With contact block	Scheme	Reference	Weight kg
Fixed bodies				
1 step	Single-pole 1 C/O snap action (XCK Z01)		ZC2 JC16	0.355
	Double-pole 2 C/O simultaneous snap action (XES P1021)		ZC2 JC26	0.355
2 step	Double-pole 2 C/O staggered snap action (XES P1031)		ZC2 JC46	0.355
Plug-in bodies				
1 step	Single-pole 1 C/O snap action		ZC2 JD16	0.380
	Double-pole 2 C/O simultaneous snap action		ZC2 JD26	0.380
2 step	Double-pole 2 C/O staggered snap action		ZC2 JD46	0.380

Plunger heads

Type of operator	Compatible bodies	Maximum actuation speed	Reference	Weight kg
For actuation on end				
End plunger metal	ZC2 J●16	0.5 m/s	ZC2 JE616	0.195
	ZC2 J●26			
	ZC2 J●46	0.5 m/s	ZC2 JE816	0.195
Side plunger metal	ZC2 J●16	0.5 m/s	ZC2 JE636	0.240
	ZC2 J●26			
	ZC2 J●46	0.5 m/s	ZC2 JE836	0.240
For actuation by 30° cam				
End ball bearing plunger	ZC2 J●16	0.1 m/s	ZC2 JE666	0.205
	ZC2 J●26			
End roller plunger steel	ZC2 J●16	1 m/s	ZC2 JE626	0.200
	ZC2 J●26			
	ZC2 J●46	1 m/s	ZC2 JE826	0.200
Side plunger with horizontal roller steel	ZC2 J●16	0.6 m/s	ZC2 JE646	0.245
	ZC2 J●26			
	ZC2 J●46	0.6 m/s	ZC2 JE846	0.245
Side plunger with vertical roller steel	ZC2 J●16	0.6 m/s	ZC2 JE656	0.245
	ZC2 J●26			
	ZC2 J●46	0.6 m/s	ZC2 JE856	0.245

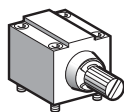


ZC2 JE●56

Limit switches

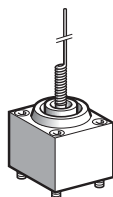
Osiswitch® Application

For very severe applications, type XC2 J
Fixed or plug-in body. Adaptable sub-assemblies for
low temperature applications (- 40 °C)



ZC2 JE06

Rotary heads (without operating lever)				
Type	Compatible bodies	Maximum actuation speed	Reference	Weight kg
Spring return				
Actuation from left AND right	ZC2 J●16 ZC2 J●26	1.5 m/s	ZC2 JE016	0.210
	ZC2 J●46	1.5 m/s	ZC2 JE046	0.210
Actuation from right	ZC2 J●16 ZC2 J●26	1.5 m/s	ZC2 JE026	0.210
	ZC2 J●46	1.5 m/s	ZC2 JE066	0.210
Actuation from left	ZC2 J●16 ZC2 J●26	1.5 m/s	ZC2 JE036	0.210
	ZC2 J●46	1.5 m/s	ZC2 JE076	0.210
Actuation from left OR right (see page 5/198)	ZC2 J●16 ZC2 J●26	1.5 m/s	ZC2 JE056	0.210
Stay put (see page 5/198)				
Actuation from left AND right	ZC2 J●16 ZC2 J●26	1.5 m/s	ZC2 JE096	0.210



ZC2 JE706

Multi-directional head (with operator)				
Type of operator	Compatible bodies	Maximum actuation speed	Reference	Weight kg
For actuation by any moving part				
"Cat's whisker"	ZC2 J●16 ZC2 J●26	1 m/s in any direction	ZC2 JE706	0.190

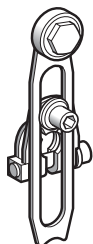
Limit switches

Osiswitch® Application

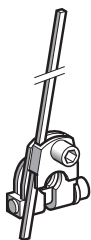
For very severe applications, type XC2 J
Fixed or plug-in body. Adaptable sub-assemblies for
low temperature applications (- 40 °C)



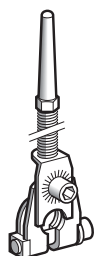
ZC2 JY1●



ZC2 JY31



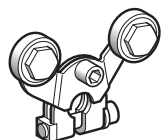
ZC2 JY51



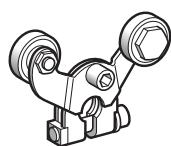
ZC2 JY81



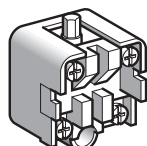
ZC2 JY91



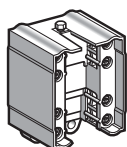
ZC2 JY71



ZC2 JY61



XCK Z01



XES P10●1

Operating levers for rotary heads

Description	Reference	Weight kg
For actuation by 30° cam		
Roller lever (1)	Thermoplastic	ZC2 JY11 0.030
	Steel	ZC2 JY13 0.040
	Steel, ball bearing mounted	ZC2 JY12 0.040
Variable length roller lever (1)	Thermoplastic	ZC2 JY31 0.045

For actuation by any moving part

Rigid rod lever	Steel $\varnothing$ 3 mm, L = 125 mm (1)	ZC2 JY51 0.035
Spring lever (1)		ZC2 JY81 0.040
Spring-rod lever (1)		ZC2 JY91 0.040

For actuation by specific cam (only for operation with head ZC2 JE096, see page 5/198)

Forked arm with rollers thermoplastic (1)	1 track	ZC2 JY71 0.055
	2 track	ZC2 JY61 0.055

Contact blocks

Type of contact	Scheme	For body	Reference	Weight kg
Single-pole 1 C/O snap action		ZC2 JC16	XCK Z01	0.050
Double-pole 2 C/O simultaneous snap action		ZC2 JC26	XES P1021	0.045
Double-pole 2 C/O staggered snap action		ZC2 JC46	XES P1031	0.045

(1) Adjustable throughout 360°.

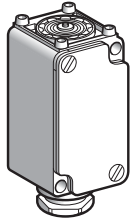
Other versions

Other operating levers for rotary heads.
Please consult your Regional Sales Office.

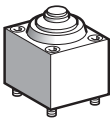
Limit switches

Osiswitch® Application

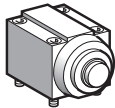
For very severe applications, type XC2 J
Fixed body. Adaptable sub-assemblies for
high temperature applications (+ 120 °C)



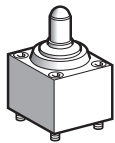
ZC2 JC15



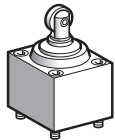
ZC2 JE15



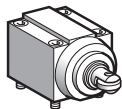
ZC2 JE35



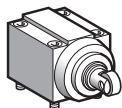
ZC2 JE65



ZC2 JE25



ZC2 JE45



ZC2 JE55

Bodies with contacts for plunger or rotary head

Type	With contact block	Scheme	Reference	Weight kg
Fixed bodies				
1 step	Single-pole 1 C/O snap action (XCK Z01)		ZC2 JC15	0.355
	Double-pole 2 C/O simultaneous snap action (XES P10215)		ZC2 JC25	0.355
2 step	Double-pole 2 C/O staggered snap action (XES P10315)		ZC2 JC45	0.355

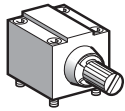
Plunger heads

Type of operator	Compatible bodies	Maximum actuation speed	Reference	Weight kg
For actuation on end				
End plunger metal	ZC2 JC15 ZC2 JC25	0.5 m/s	ZC2 JE615	0.195
	ZC2 JC45	0.5 m/s	ZC2 JE815	0.195
Side plunger metal	ZC2 JC15 ZC2 JC25	0.5 m/s	ZC2 JE635	0.240
	ZC2 JC45	0.5 m/s	ZC2 JE835	0.240
For actuation by 30° cam				
End ball bearing plunger	ZC2 JC15 ZC2 JC25	0.1 m/s	ZC2 JE665	0.205
End roller plunger steel	ZC2 JC15 ZC2 JC25	1 m/s	ZC2 JE625	0.200
	ZC2 JC45	1 m/s	ZC2 JE825	0.200
Side plunger with horizontal roller steel	ZC2 JC15 ZC2 JC25	0.6 m/s	ZC2 JE645	0.245
	ZC2 JC45	0.6 m/s	ZC2 JE845	0.245
Side plunger with vertical roller steel	ZC2 JC15 ZC2 JC25	0.6 m/s	ZC2 JE655	0.245
	ZC2 JC45	0.6 m/s	ZC2 JE855	0.245

Limit switches

Osiswitch® Application

For very severe applications, type XC2 J
Fixed body. Adaptable sub-assemblies for
high temperature applications (+ 120 °C)



ZC2 JE015

Rotary heads (without operating lever)

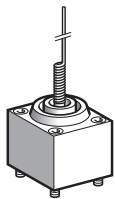
Type	Compatible bodies	Maximum actuation speed	Reference	Weight kg
Spring return				
Actuation from left AND right	ZC2 JC15 ZC2 JC25	1.5 m/s	ZC2 JE015	0.210
	ZC2 JC45	1.5 m/s	ZC2 JE045	0.210
Actuation from right	ZC2 JC15 ZC2 JC25	1.5 m/s	ZC2 JE025	0.210
	ZC2 JC45	1.5 m/s	ZC2 JE065	0.210
Actuation from left	ZC2 JC15 ZC2 JC25	1.5 m/s	ZC2 JE035	0.210
	ZC2 JC45	1.5 m/s	ZC2 JE075	0.210

Stay put (see page 5/198)

Actuation from left AND right	ZC2 JC15 ZC2 JC25	1.5 m/s	ZC2 JE095	0.210
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Multi-directional head (with operator)

Type of operator	Compatible bodies	Maximum actuation speed	Reference	Weight kg
For actuation by any moving part				
"Cat's whisker"	ZC2 JC15 ZC2 JC25	1 m/s in any direction	ZC2 JE705	0.190



ZC2 JE705

Limit switches

Osiswitch® Application

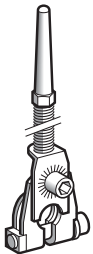
For very severe applications, type XC2 J
Fixed body. Adaptable sub-assemblies for
high temperature applications (+ 120 °C)



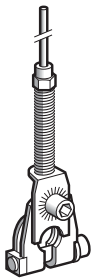
ZC2 JY1●



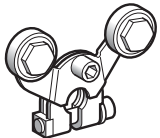
ZC2 JY51



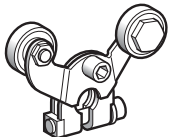
ZC2 JY815



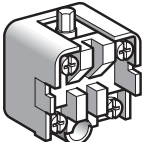
ZC2 JY915



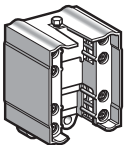
ZC2 JY715



ZC2 JY615



XCK Z015



XES P10●15

Operating levers for rotary heads

Description	Reference	Weight kg
For actuation by 30° cam		
Roller lever (1)	Thermoplastic	ZC2 JY115 0.030
	Steel	ZC2 JY13 0.040
	Steel, ball bearing mounted	ZC2 JY12 0.040
Offset roller lever (1)	Thermoplastic	ZC2 JY215 0.035
Variable length roller lever (1)	Thermoplastic	ZC2 JY315 0.035
Variable length offset roller lever (1)	Thermoplastic	ZC2 JY415 0.040
For actuation by any moving part		
Rigid rod lever	Steel $\varnothing$ 3 mm, L = 125 mm (1)	ZC2 JY51 0.035
Spring lever (1)		ZC2 JY815 0.040
Spring-rod lever (1)		ZC2 JY915 0.040
For actuation by specific cam (only for operation with head ZC2 JE095, see page 5/198)		
Forked arm with rollers thermoplastic (1)	1 track	ZC2 JY715 0.055
	2 track	ZC2 JY615 0.055

Contact blocks

Type of contact	Scheme	For body	Reference	Weight kg
Single-pole 1 C/O snap action		ZC2 JC15	XCK Z015	0.050
Double-pole 2 C/O simultaneous snap action		ZC2 JC25	XES P10215	0.045
Double-pole 2 C/O staggered snap action		ZC2 JC45	XES P10315	0.045

(1) Adjustable throughout 360°.

Other versions

Other operating levers for rotary heads.
Please consult your Regional Sales Office.

Miniature snap switches

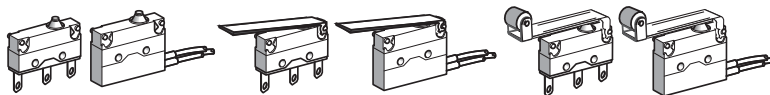
Osiswitch®

Subminiature design, DIN 41635 B format, sealed

Sub-subminiature design, DIN 41635 D format

References

Subminiature design, DIN 41635 B format, sealed



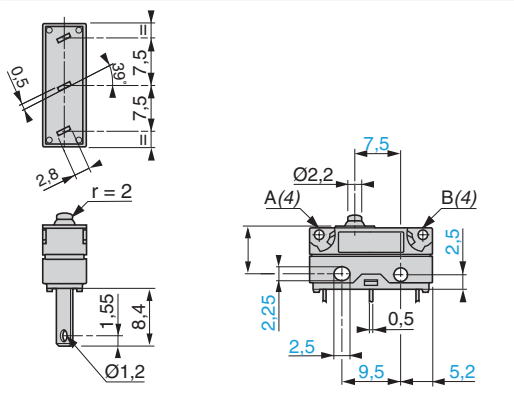
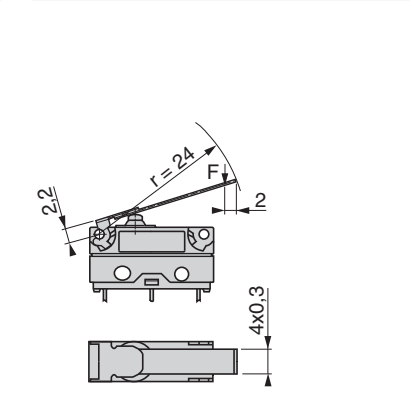
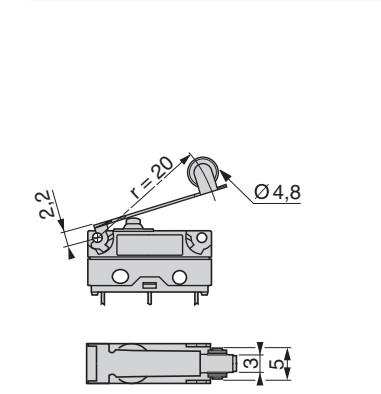
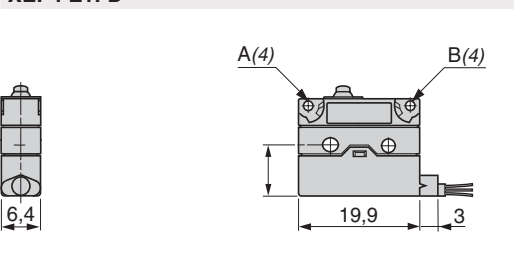
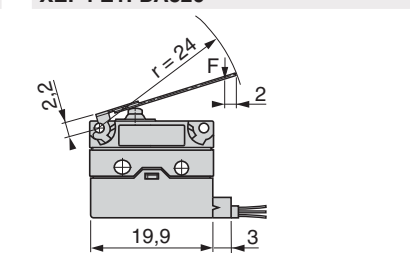
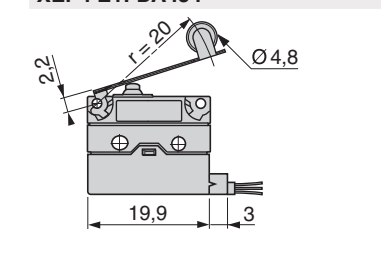
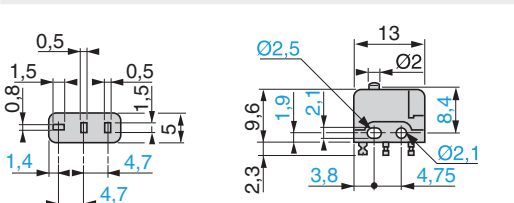
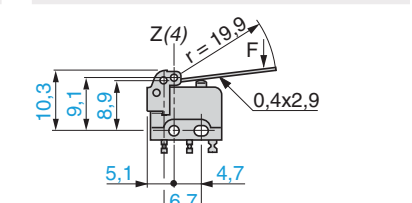
Type of operator		Plunger	Flat lever (1)	Roller lever (1)
 Single-pole C/O snap action Wiring: 1 Black 2 Grey 4 Blue	2.8 mm cable clip tag connections	XEP4 E1W7 (3)	XEP4 E1W7A326 (3)	XEP4 E1W7A454 (3)
	Weight (g)	2.4	3.1	3.2
	Pre-cabled connections	XEP4 E1FD (3)	XEP4 E1FDA326 (3)	XEP4 E1FDA454 (3)
	Weight (g)	14.1	14.8	14.9
Separate components	Flat lever (2)	ZEP4 L326 (3)	—	—
	Weight (g)	0.7	—	—
	Roller lever (2)	ZEP4 L454 (3)	—	—
	Weight (g)	0.8	—	—

Sub-subminiature design, DIN 41635D format



Type of operator		Plunger	Flat lever (1)
 Single-pole C/O snap action	Solder tag connections	XEP5 P1W2 (3)	XEP5 P1W2Z55B (3)
	Weight (g)	1.4	1.9

Dimensions

XEP4 E1W7	XEP4 E1W7A326	XEP4 E1W7A454
		
XEP4 E1FD	XEP4 E1FDA326	XEP4 E1FDA454
		
XEP5 P1W2	XEP5 P1W2Z55B	
		

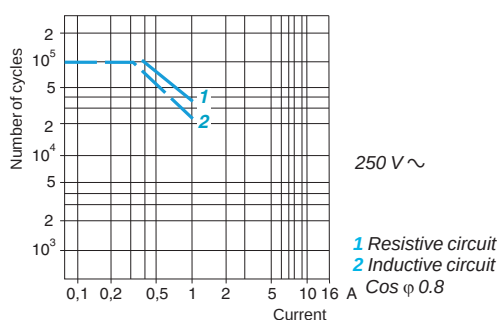
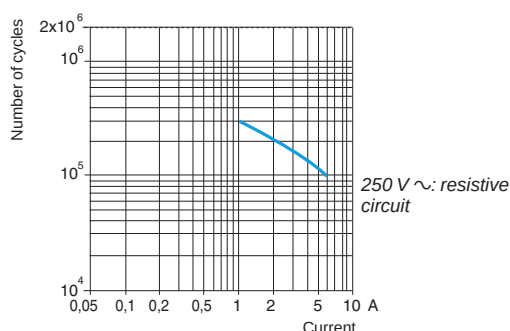
(1) In order to avoid damage to the fixing spigots, removal of the lever from complete products is not recommended.

(2) Levers only for mounting on basic (plunger) snap switches (XEP4 E1W7 and XEP4 E1FD).

(3) Switches sold in lots of 5.

(4) A, B, Z: lever fixing positions.

Switch type			XEP4 E1●●, XEP5 P1W2 Plunger	XEP4 E1●●A326, XEP5 P1W2Z55B Flat lever	XEP4 E1●●A454 Roller lever
Environment characteristics					
Lever fixing position (1)			–	A	A
Switch actuation			On end	Horizontal	
Product certifications			CE, IEC 60947-5-1, EN 60947-5-1, c UR us, UL 1054, EN 61058		
Degree of protection			IP 67 XEP4 E1FD●●, case IP 67 and tags IP 00 XEP4 E1W7●●, case IP 40 and tags IP 00 XEP 5P1W2●●		
Operating temperature			- 40...+ 105 °C XEP4 E1FD●●, - 40...+125 °C XEP4 E1W●●●● and XEP5 P1●●●		
Materials	Enclosure		Polyester XEP4, diallyl-phtalate XEP5		
	Lever		–	Stainless steel	Stainless steel, glass reinforced polyamide roller
	Contact		AgCdO XEP4 E1●●, Ag XEP5		
	Tags		Tinned brass XEP4 E1W●●●, gold plated brass XEP5 P1●●		
Mechanical characteristics					
			Lever fixing position (1)		
Maximum tripping force	XEP4	A	2.5 N	0.63 N	0.83 N
		B	2.5 N	1.25 N	1.67 N
	XEP5		2 N	0.80 N	–
Minimum release force	XEP4	A	0.80 N	0.20 N	0.27 N
		B	0.80 N	0.40 N	0.53 N
	XEP5		0.40 N	0.15 N	–
Maximum permissible end of travel force	XEP4	A	10 N	2.5 N	3.33 N
		B	10 N	5 N	6.67 N
	XEP5		10 N	–	–
Tripping point (TP) (2)	XEP4	A	8.40 ^{+/- 0.3} mm	10.7 ^{+/- 1.7} mm	15.5 ^{+/- 1.4} mm
		B	8.40 ^{+/- 0.3} mm	9.6 ^{+/- 1.0} mm	14.5 ^{+/- 0.9} mm
	XEP5		8.40 mm	9.20 mm	–
Maximum differential travel	XEP4	A	0.13 mm	0.52 mm	0.39 mm
		B	0.13 mm	0.26 mm	0.20 mm
	XEP5		0.06 mm	0.25 mm	–
Minimum overtravel	XEP4	A	0.60 mm	2.40 mm	1.80 mm
		B	0.60 mm	1.20 mm	0.90 mm
	XEP5		0.10 mm	–	–
Inter-contact distance	XEP4		0.4 mm		
	XEP5		0.3 mm		
Mechanical durability	XEP4		2 million operating cycles		
	XEP5		0.1 million operating cycles		
Electrical characteristics					
Operational characteristics	XEP4		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, EN 60947-5-1 Appendix A 125-250 V AC 6.0 A conforming to UL 1054 6 (1) A 250 V AC 10,000 cycles conforming to EN 61058		
	XEP5		AC-15: D300 (Ue: 240 V, Ie: 0.3 A) conforming to IEC 60947-5-1, EN 60947-5-1 Appendix A		
Thermal current	XEP4		7.5 A on 250 V (50/60 Hz)		
	XEP5		8.5 A on 250 V (50/60 Hz)		
Connection	XEP4		XEP4 E1W7●: 2.8 mm cable clip tags XEP4 E1FD: Pre-cabled (horizontally in-line), 3 x 0.5 mm², length 0.5 m		
	XEP5		Solder tags		
Operating curves					
XEP4 E1●●			XEP5 P1●●		

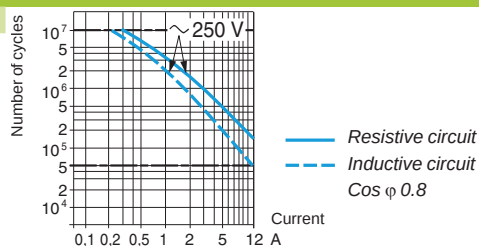


- (1) Miniature snap switches fitted with a lever are supplied with the lever fixed in position A (see page 5/156). For basic (plunger) snap switches, it is possible to fix a lever in position A or B, depending on the required tripping conditions (see page 5/156).
- (2) Position of the operator in relation to the switch fixings (fixing hole centre line), at the instant the contact changes state.

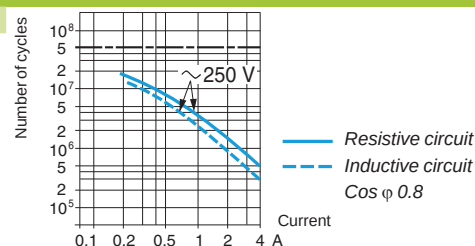
Switch type Type of operator			XEP3 S●W2 Plunger	XEP3 S●W2B254 Flat lever	XEP3 S●W2B259 Roller lever
Environment characteristics					
Lever fixing position (1)			–	B	B
Switch actuation			On end	Horizontal	
Product certifications			UR us, CE, IEC/EN 60947-5-1, UL 1054, EN 61058-1		
Degree of protection			Case IP 40 and tags IP 00		
Operating temperature			- 25...+ 125 °C		
Materials	Enclosure	Polyester			
	Lever		–	Stainless steel	Stainless steel, glass reinforced polyamide roller
	Contact	AgNi			
Mechanical characteristics					
Lever fixing position (1)					
Maximum tripping force	Standard	A	0.8 N	0.2 N	
		B	0.8 N	0.4 N	
		C	0.8 N	0.53N	
	Very low force	A	0.25 N	0.06 N	
		B	0.25 N	0.13 N	
		C	0.25 N	0.17 N	
Minimum release force	Standard	A	0.20 N	0.05 N	
		B	0.20 N	0.10 N	
		C	0.20 N	0.13 N	
	Very low force	A	0.05 N	0.01N	
		B	0.05 N	0.03 N	
		C	0.05 N	0.03 N	
Maximum permissible end of travel force	Standard, very low force	A	20 N	5 N	
		B	20 N	10 N	
		C	20 N	13 N	
Tripping point (TP) (2)	Standard, very low force	A	14.70 ^{+/- 0.4} mm	15.20 ^{+/- 2.5} mm	20.5 ^{+/- 2.9} mm
		B	14.70 ^{+/- 0.4} mm	15.20 ^{+/- 1.0} mm	20.5 ^{+/- 1.5} mm
		C	14.70 ^{+/- 0.4} mm	15.20 ^{+/- 0.8} mm	20.5 ^{+/- 1.2} mm
Maximum differential travel	Standard, very low force	A	0.35 mm	1.40 mm	
		B	0.35 mm	0.70 mm	
		C	0.35 mm	0.53 mm	
Minimum overtravel	Standard	A	1.20 mm	4.80 mm	
		B	1.20 mm	2.40 mm	
		C	1.20 mm	1.80 mm	
	Very low force	A	1.10 mm	4.40 mm	
		B	1.10 mm	2.20 mm	
		C	1.10 mm	1.65 mm	
Inter-contact distance			0.40 mm		
Mechanical durability for 2/3 overtravel	Standard	20 million operating cycles			
	Very low force	50 million operating cycles			
Electrical characteristics					
Operational characteristics	Standard	AC-15: B300 (Ue: 240 V, Ie: 1.5 A) DC-13: R300 (Ue: 250 V, Ie: 0.1 A) conforming to IEC/EN 60947-5-1 Appendix A 125-250 VAC 10.1A - 1/2 HP conforming to UL 1054 12 (3) A 250 V AC 10,000 cycles conforming to EN 61058-1			
	Very low force	AC-15: D300 (Ue: 240 V, Ie: 0.3 A) conforming to IEC/EN 60947-5-1 Appendix A 125-250 V AC 4 A - 1/10 HP conforming to UL 1054 4 (1) A 250 V AC 50,000 cycles conforming to EN 61058-1			
Thermal current	Standard	15 A on 250 V (50/60 Hz)			
	Very low force	5 A on 250 V (50/60 Hz)			
Connection			XEP3 S●W2: solder tags, XEP3 S●W6: 4.8 mm cable clip tags XEP3 S●W3: 6.35 mm cable clip tags.		

Operating curves

XEP3 S1●●



XEP3 S2●●



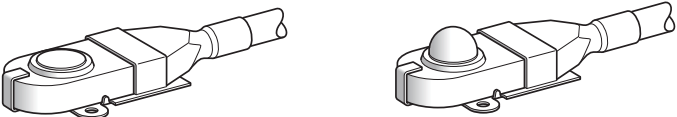
(1) Miniature snap switches fitted with a lever are supplied with the lever fixed in position B (see page 5/158). For basic (plunger) snap switches, it is possible to fix a lever in position A, B or C, depending on the required tripping conditions (see page 5/158).

(2) Position of the operator in relation to the switch fixings (fixing hole centre line), at the instant the contact changes state.

Miniature snap switches

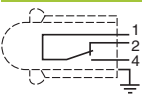
Osiswitch®
Sealed design
Pre-cabled

Type of head	Plunger (fixing by the body)	
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Type of operator	Head with flat plunger	Head with domed encased plunger
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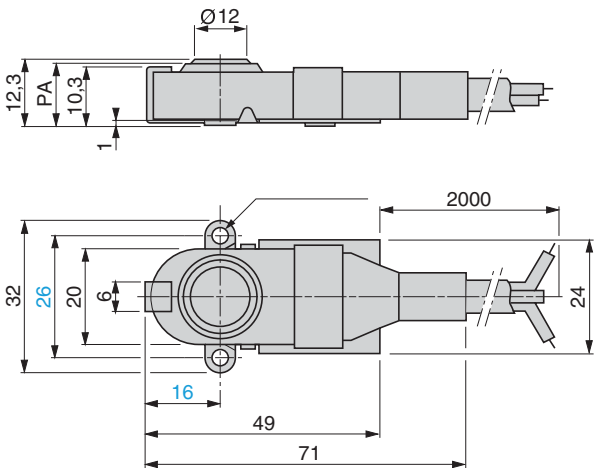
References

	Single-pole C/O snap action Wiring: 1 Black 2 Brown 4 Blue	XC 010L2	XC 011L2
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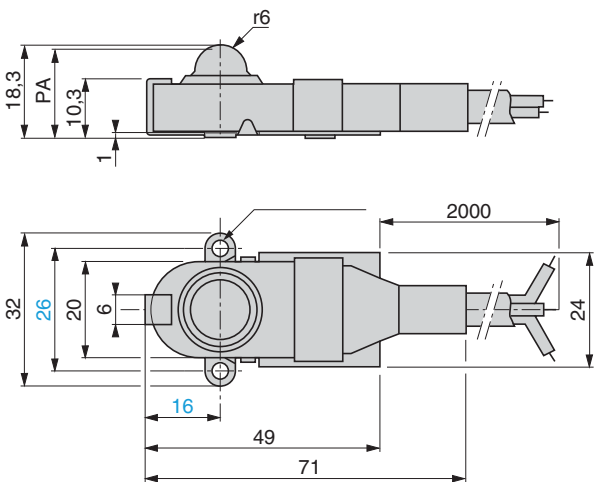
Weight (kg)	0.145	0.150
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Dimensions

XC 010L2



XC 011L2



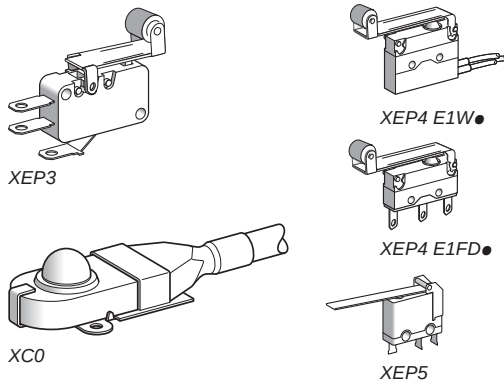
Switch type		XC 010●	XC 011●
Environment characteristics			
Switch actuation		On end, flat plunger (1)	On end, domed plunger (1)
Product certifications		CE, IEC 60947-5-1	
Degree of protection		IP 66	
Operating temperature		0...+ 85 °C	
Materials	Internal housing	Metal	
	Casing	Nitrile	
	Fixing support	Steel, zinc passivated	
	Contact	Ag	
Mechanical characteristics			
Maximum tripping force		5.3 N	
Minimum release force		1.5 N	
Maximum permissible end of travel force		30 N	
Tripping point (TP) (2)		11.4 ^{±0.4} mm	17.4 ^{±0.5} mm
Maximum differential travel		0.2 mm	
Minimum overtravel		0.2 mm	
Inter-contact distance		0.5 mm	
Mechanical durability		2 million operating cycles	
Electrical characteristics			
Operational current		1 A on 24 V (50/60 Hz)	
Thermal current/insulation voltage		12 A/60 V	
Connection		A05 VVF cable, 3 x 0.75 mm², length 2 metres, overall diameter ≤ 7.6 mm	
Electrical durability		AC-15: 0.5 million operating cycles	

(1) Manual actuation must be made by an intermediate insulated part, in order to meet basic safety requirements.

One of the two fixing holes must also be used as an earth protection terminal.

(2) Distance between the base of the switch and the top of the plunger at the instant the contact changes state (see dimensions, page 5/160).

Presentation



Electromechanical detection

■ Osiswitch miniature snap switches, featuring electromechanical technology, assure the following functions:

- detection of presence or absence,
- detection of position.

Actuation of the operator (plunger or lever) on the miniature snap switch causes the electrical contact to change state. This information can then be processed by a PLC controlling the installation.

Osiswitch miniature snap switches can be used both for industrial applications and the building sector.

Features

■ Osiswitch miniature snap switches incorporate a C/O snap action, single break, contact.

They are characterised by:

- high electrical ratings for their very small size,
- short tripping travel,
- low tripping force,
- high repeat accuracy on the tripping points,
- long service life.

Terminology

Forces

- Maximum tripping force:
maximum force which must be applied to the operator to move it from the rest (unactuated) position to the trip position (tripping point).
- Minimum release force:
value to which the force on the operator must be reduced to allow the snap action mechanism to return to its rest (unactuated) position.
- Maximum permissible end of travel force:
maximum force that can be applied to the operator at the end of its travel without damaging the switch.

Position / Travel

- 1 **Tripping point:** position of the operator in relation to the switch fixings (fixing hole centre line) at the instant the switch contact changes state.
- A **Differential travel:** distance between the tripping point and the position at which the snap action mechanism returns to its initial state on release of the operator.
- 2 **Overtravel limit:** position of the operator when an extreme force has moved it to the effective end of its available travel.
- B **Overtravel:** distance between the tripping point and the overtravel limit.

The reference point for the figures given for forces and travel is a point F, which is situated on the plunger in the case of a basic switch or at 3 mm from the end of the plain lever in the case of a lever operated switch.

Changeover time

- This is the time taken by the moving contact when moving from one fixed contact to another until it becomes fully stable (contact bounce included).
- This time is related to the inter-contact distance, the mechanical characteristics of the snap action mechanism and the mass of the moving element. However, due to the snap action mechanisms used, the time is largely independent to the speed of operation. It is normally less than 20 milliseconds (including bounce times of less than 5 ms).

Operating speed and maximum usable operating rate

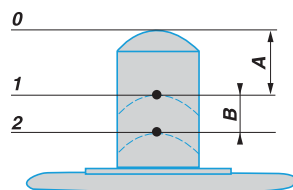
- Our miniature snap switches are suitable for a wide range of operating speeds: generally, from 1 mm/mn to 1 m/s.
- The maximum usable operating rate on a light electrical load may be as high as 10 operations/second.

Mounting and operation

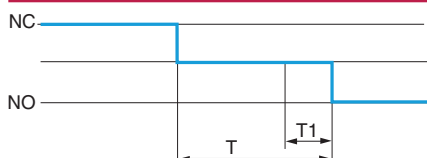
- To conform to the leakage paths and air gaps in standards EEC 24 - EN/IEC 61058 and EN/IEC 60947:
- an insulation pad must be inserted between the snap switch and the fixing surface if the latter is metal,
- manual operation of a metal actuator must only be carried out with the aid of an intermediate actuator made of an insulating material.
- The installer must ensure adequate protection against direct contact with the output terminals.

Actuation method

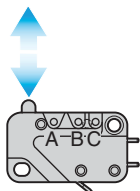
- Direct operation:
 - the plunger should preferably be actuated along its axis. However, the majority of our miniature snap switches will accept skewed operation provided the angle of actuation is not more than 45°.
- The travel of the actuator must not be limited to only reaching the tripping point. The actuator must always be operated in such a manner so that the plunger reaches a point at least 0.5 times the stated overtravel value of the switch. Steps must also be taken to ensure that it does not reach its end of travel nor exceed the maximum permissible end of travel force.



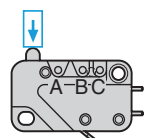
Mechanical characteristics



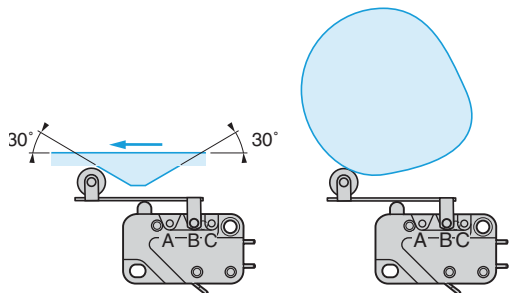
T1: bounce time
T: changeover time



Mounting



Mounting (continued)



Actuation method (continued)

- Lever operators:
 - when actuation is by a roller lever, force should preferably be applied in the direction shown in the diagrams opposite,
 - where the movements involved are fast, the ramp should be so designed as to ensure that the operator is not subjected to any violent impact or abrupt release.

Fixing - Tightening torque

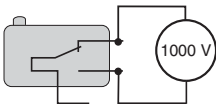
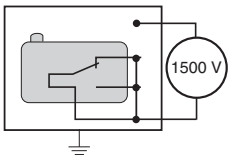
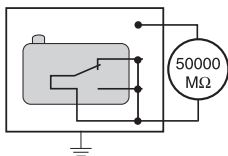
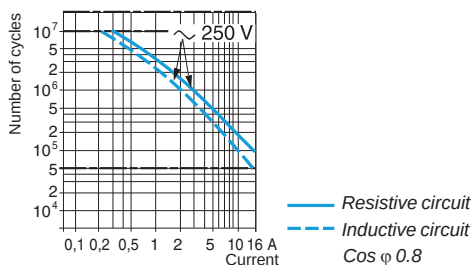
- The tightening torque of the fixing screws must conform to the following values:

Ø of fixing screw		2	2.5	3	3.5	4
Tightening torque (cm.N)	Maximum	25	35	60	100	150
	Minimum	15	25	40	60	100

Resistance to mechanical shock and vibration

- Resistance to shock and vibration depends on the mass of the moving parts and on the forces holding the contacts together.
- In general, for a miniature snap switch without accessory:
 - vibration > 10 gn, 10 to 500 Hz,
 - shock > 50 gn 11 ms 1/2 sine wave.

Electrical characteristics



Operating curves

- These indicate the electrical life of the miniature snap switches under standard conditions (20°C, 1 cycle/2 seconds), by showing the number of switching operations which can be performed with given types of load. For sealed snap switches, the operating rate is 1 cycle/6 s.

Insulation resistance

- The insulation resistance of the miniature snap switches is generally greater than 50,000 MΩ, measured at 500 V d.c.

Dielectric strength

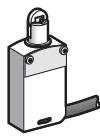
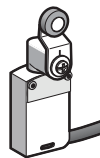
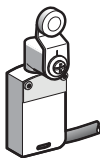
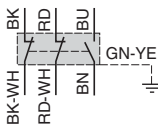
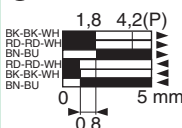
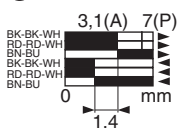
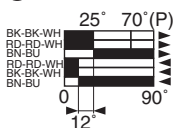
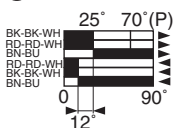
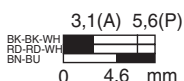
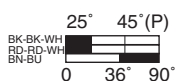
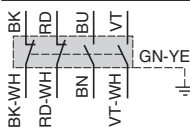
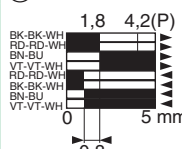
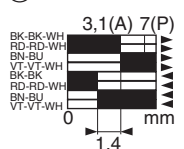
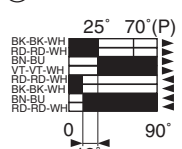
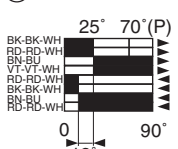
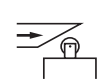
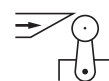
- The dielectric strength of our miniature snap switches is generally superior to:
 - 1500 Volts between live parts and earth,
 - 1000 Volts between contacts,
 - 600 Volts between contacts for switches with an inter-contact distance less than 0.3 mm.

Safety detection solutions

Safety limit switches

Miniature design, metal, type XCS M

Pre-cabled

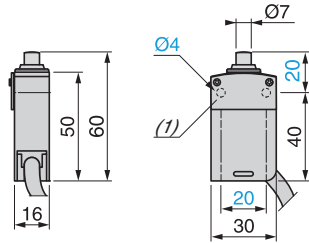
Type of head		Plunger (fixing by the body)		Rotary (fixing by the body)	
					
Type of operator		Metal end plunger	Roller plunger	Thermoplastic roller lever	Steel roller lever
References					
	3-pole N/C+N/C+N/O snap action contact	XCS M3910L1 	XCS M3902L1 	XCS M3915L1 	XCS M3916L1 
	3-pole N/C+N/C+N/O break before make, slow break contact	XCS M3710L1 	XCS M3702L1 	XCS M3715L1 	XCS M3716L1 
	4-pole N/C+N/C+N/O+N/O snap action contact	XCS M4110L1 	XCS M4102L1 	XCS M4115L1 	XCS M4116L1 
Weight (kg)		0.165	0.170	0.205	0.210
Contact operation		 closed  open		(A) = cam displacement (P) = positive opening point  N/C contact with opening positive operation	
Characteristics					
Switch actuation		On end	By 30° cam		
Type of actuation					
Maximum actuation speed		0.5 m/s	0.5 m/s	1.5 m/s	
Mechanical durability		10 million operating cycles			
Minimum force or torque	Tripping	8.5 N	7 N	0.5 N.m	
	Positive opening	42.5 N	35 N	0.1 N.m	
Cabling	3-pole contacts	PvR pre-cabled, 7 x 0.5 mm ² , length 1 m (1)			
	4-pole contacts	PvR pre-cabled, 9 x 0.34 mm ² , length 1 m (1)			

(1) For a 2 m long cable, replace L1 with L2.

For a 5 m long cable, replace L1 with L5.

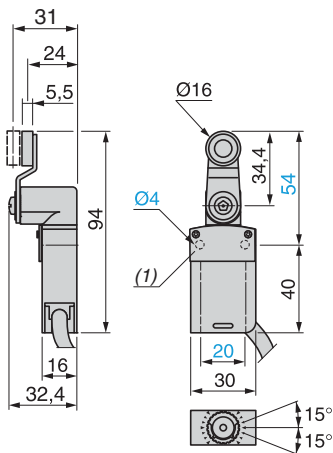
Dimensions

XCSM ●●10L1



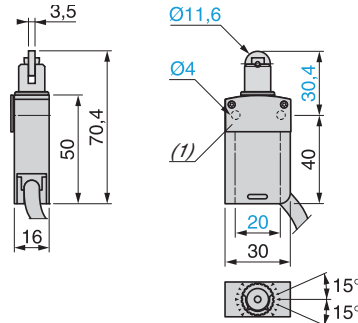
(1) Protective plate fixed by 5-lobe torque safety screws.

XCSM ●●15L1

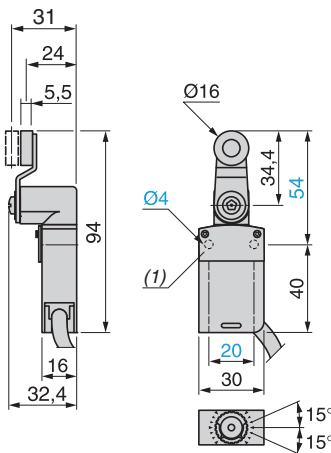


(1) Protective plate fixed by 5-lobe torque safety screws.

XCSM ●●02L1



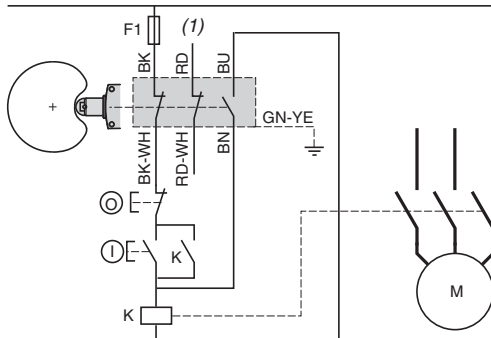
XCSM ●●16L1



Connections

Wiring to category 1 conforming to EN 954-1/ IEC 13849-1

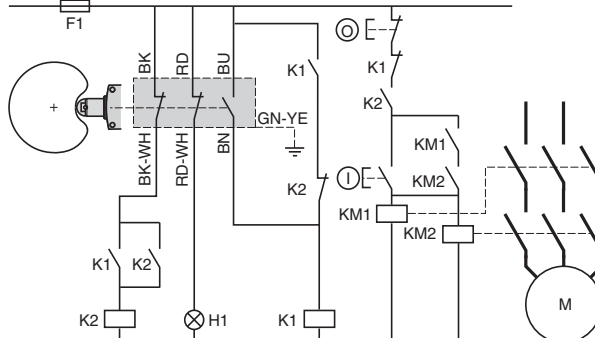
Example with 3-pole N/C+N/C+N/O contact and protection fuse to prevent shunting of the N/C contacts, either by cable damage or by tampering.



(1) Signalling contact

Wiring to category 3 conforming to EN 954-1/IEC 13849-1

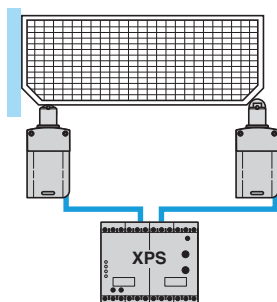
Example with 3-pole N/C+N/C+N/O contact with mixed redundancy of the contacts and the associated control relays. Opening and closing of the guard necessary to activate K1.



H1: "guard closed" indicator light

Example of guard monitoring using 2 switches and 1 safety module (category 4)

Operation in positive and negative (combined) mode



Safety detection solutions

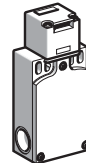
Guard switches

Plastic, turret head (1), types XCS PA,
XCS TA and XCS TE

1 or 2 cable entries M16 x 1.5 (2)

Type of switch

Without locking of actuator



References of switches without actuator (⊖ N/C contact with positive opening operation)

2-pole N/C + N/O (3) break before make slow break		XCS PA592	⊖	—
2-pole N/C + N/O (3) snap action		XCS PA192	⊖	—
2-pole N/O + N/C (3) make before break slow break		XCS PA692	⊖	—
2-pole N/C + N/C (3) slow break		XCS PA792	⊖	—
2-pole N/C + N/C (3) snap action		XCS PA292	⊖	—
3-pole N/C + N/O + N/O (3) (2 N/O staggered) slow break		XCS PA892	⊖	XCS TA592 ⊖
3-pole N/C + N/C + N/O (3) (N/O staggered) slow break		XCS PA992	⊖	XCS TA792 ⊖
3-pole N/C + N/C + N/O (3) snap action		XCS PA492	⊖	—
3-pole N/C + N/C + N/C (3) slow break		—	—	XCS TA892 ⊖
Weight (kg)		0.110		0.160

Characteristics

Actuation speed	Maximum: 0.5 m/s, minimum: 0.01 m/s
Resistance to forcible withdrawal of actuator	XCS PA, XCS TA: 10 N (50 N using actuators XCS Z12 or XCS Z13 together with guard retaining device XCS Z21) XCS TE: 500 N
Mechanical durability	XCS PA, XCS TA: > 1 million operating cycles XCS TE: 1 million operating cycles
Maximum operating rate	For maximum durability: 600 operating cycles per hour
Minimum force for positive opening	≥ 15 N
Cable entry	XCS PA, XCS TE: 1 entry tapped M16 x 1.5 for ISO cable gland XCS TA: 2 entries tapped M16 x 1.5 for ISO cable gland Clamping capacity 7 to 10 mm
Materials	Body: zamak. Head: zamak. Safety screws: 5-lobe torque. Protective plate: steel..

References of accessories

Description	For use with	Unit reference	Weight kg
Blanking plugs for operating head slot (Sold in lots of 10)	XCS PA, XCS TA, XCS TE	XCS Z28	0.050
Tool for forced opening of interlocking device (Sold in lots of 10)	XCS TE	XCS Z100	0.050
Padlocking device to prevent insertion of actuator, for up to 3 padlocks (padlocks not included)	XCS PA, XCS TA, XCS TE	XCS Z91	0.053
Centreur de clé-langue (4) (Vis de fixation fournis)	XCS PA, XCS TA, XCS TE	XCS Z200	0.022

(1) Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.

(2) For cable entries tapped for n° 11 (Pg 11) cable gland, replace the last number in the reference (2) by 1.

Example: XCS PA592 becomes XCS PA591.

(3) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

(4) Do not use with XCS Z91.

Other versions: please consult your Regional Sales Office

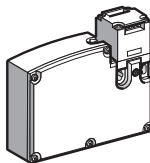
Safety detection solutions

Guard switches

Plastic, turret head (1), types XCS PA,
XCS TA and XCS TE

1 or 2 cable entries M16 x 1.5 (2)

Type of switch	With interlocking, locking by solenoid
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Type of interlocking	Locking on de-energisation and unlocking on energisation of solenoid (3). To order a guard switch with locking on energisation and unlocking on de-energisation of the solenoid, replace the 2nd number (3) by 5 in the references shown below. Example: XCS TE5312 becomes XCS TE5512.
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Supply voltage of solenoid	~ or --- 24 V (50/60 Hz on ~)
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References of switches without actuator (⊖ N/C contact with positive opening operation)

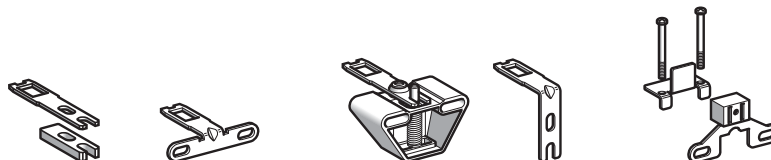
2-pole N/C + N/O (4) break before make slow break		XCS TE5312 ⊖
2-pole N/C + N/C (4) slow break		XCS TE7312 ⊕

Weight (kg)	0.360
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Solenoid characteristics

Load factor	100 %
Rated operational voltage	~ or --- 24 V
Voltage limits	- 20%, + 10% of the rated operational voltage (including ripple on ---) conforming to IEC/EN 60947-1
Service life	20 000 hours
Consumption	10 VA max.

References of actuators and guard retaining device



Description	Straight actuator	Actuator with wide fixing (5)		Pivoting actuator	Right-angled actuator	Guard retaining device (6)
For guard switches XCS PA, TA, TE	XCS Z11	XCS Z12	XCS Z15	XCS Z13	XCS Z14	XCS Z21
Weight (kg)	0.015	0.015	0.012	0.085	0.025	0.080

- (1) Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.
 (2) For cable entries tapped for n° 11 (Pg 11) cable gland, replace the last number in the reference (2) by 1
 Example: XCS TE5312 becomes XCS TE5311.
 (3) A special tool included with the guard switch enables forced opening of the interlocking mechanism, by authorised personnel, allowing withdrawal of the actuator and subsequent opening of the N/C safety contacts.
 (4) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.
 (5) 2 actuator lengths, XCS Z12: L = 40 mm, XCS Z15: L = 29 mm.
 (6) Only for use with guard switches XCS PA and XCS TA (without the actuator centering device XCS Z200), used in conjunction with actuators XCS Z12, XCS Z13 or XCS Z15.

Other versions: please consult your Regional Sales Office.

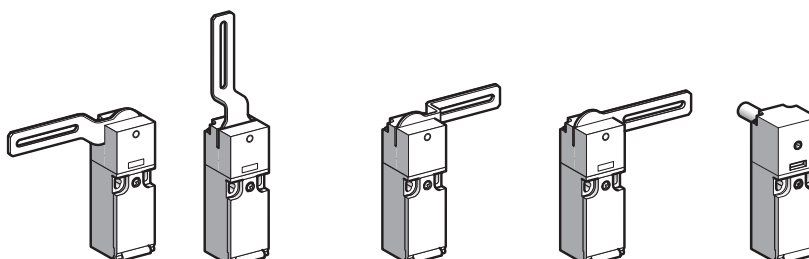
Safety detection solutions

Guard switches with lever or spindle operator

Plastic, double insulated, turret head ⁽¹⁾,
types XCS PL, XCS TL, XCS PR and XCS TR

1 or 2 cable entries M16 x 1.5 ⁽²⁾

Type	Elbowed lever (flush with rear of switch)	Straight lever	Spindle
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Operator	To left	Centred	To right	To right OR to left	Length 30 mm ⁽³⁾
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References (☞ N/C contact with positive opening operation)

2-pole N/C + N/O break before make slow break		XCS PL592 ☞	XCS PL582 ☞	XCS PL572 ☞	XCS PL562 ☞	XCS PR552 ☞
2-pole N/C + N/C slow break		-	-	-	XCS PL762 ☞	XCS PR752 ☞
3-pole N/C + N/O + N/O (2 N/O staggered) slow break		-	-	-	XCS PL862 ☞	-
3-pole N/C + N/C + N/O (N/O staggered) slow break		-	-	-	XCS PL962 ☞	XCS PR952 ☞
Weight (kg)		0.095	0.095	0.095	0.095	0.105

Type	Straight lever	Spindle
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Operator	To right OR to left	Length 30 mm ⁽³⁾
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References (☞ N/C contact with positive opening operation)

3-pole N/C + N/O + N/O (2 N/O staggered) slow break		XCS TL562 ☞	-
3-pole N/C + N/C + N/O (N/O staggered) slow break		XCS TL762 ☞	XCS TR752 ☞
3-pole N/C + N/C + N/C slow break		-	XCS TR852 ☞
Weight (kg)		0.145	0.155

Characteristics

Tripping angle	5°
Mechanical durability	1 million operating cycles
Minimum torque	For tripping: 0.1 N.m; for positive opening: 0.25 N.m (XCS PL and XCS PR), 0.45 N.m (XCS TL and XCS TR)
Cable entry	XCS P●: 1 entry tapped M16 x 1.5 for ISO cable gland. Clamping capacity 7 to 10 mm XCS T●: 2 entries tapped M16 x 1.5 for ISO cable gland. Clamping capacity 7 to 10 mm (switch supplied with 1 entry fitted with blanking plug)

⁽¹⁾ Head adjustable in 90° steps throughout 360°. Switches supplied with 2 additional self-locking screws for positive fixing of the head.

⁽²⁾ For cable entries tapped for n° 11 (Pg 11) cable gland, replace the last number in the reference ⁽²⁾ by 1.

Example: XCS PL592 becomes XCS PL591.

⁽³⁾ For switches with 80 mm spindle: replace the 2nd number in the reference ⁽⁵⁾ by 6. Example: XCS PR562. The weight increases by 0.032 kg.

Other versions: please consult your Regional Sales Office.

Safety detection solutions

Guard switches with lever or spindle operator

Plastic, double insulated, turret head ⁽¹⁾,
types XCS PL, XCS TL, XCS PR and XCS TR
1 or 2 cable entries M16 x 1.5 ⁽²⁾

Operation

Operator displacement

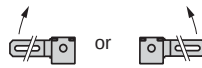
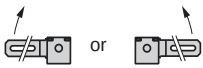
XCS PL●62

XCS PL●82

XCS TL●62

XCS PR●52

XCS TR●52



Functional diagrams

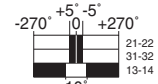
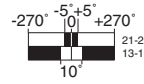
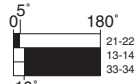
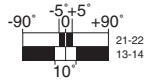
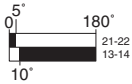
XCS PL592, PL572, PL562

XCS PL582

XCS TL562

XCS PR552

XCS TR752



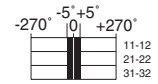
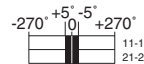
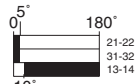
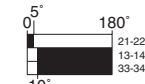
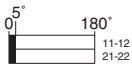
XCS PL762

XCS PL862

XCS TL762

XCS PR752

XCS TR852



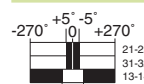
Contact operation

■ contact closed
□ contact open

XCS PL962



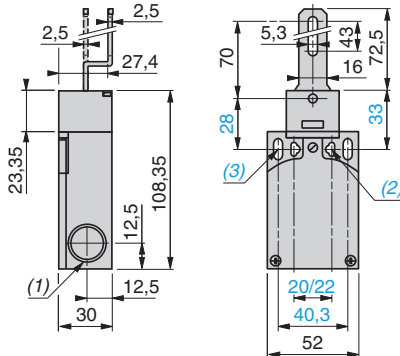
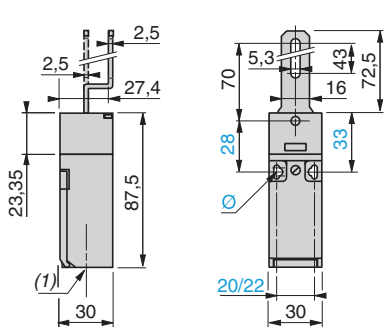
XCS PR952



Dimensions

XCS PL●●2

XCS TL●●2

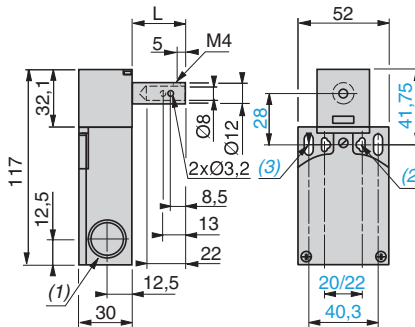
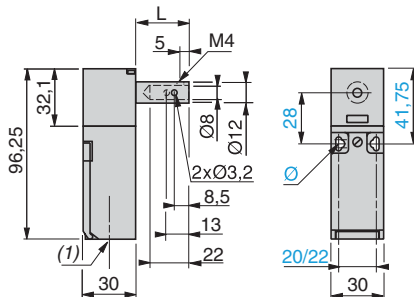


(1) 1 cable entry tapped M16 x 1.5
Ø: 2 elongated holes Ø 4.3 x 8.3 on 22 centres,
2 holes Ø 4.3 on 20 centres

(1) 2 cable entries tapped M16 x 1.5
(2) 2 elongated holes Ø 4.3 x 8.3 on 22 centres,
2 holes Ø 4.3 on 20 centres
(3) 2 elongated holes Ø 5.3 x 13.3

XCS PR●●2

XCS TR●●2



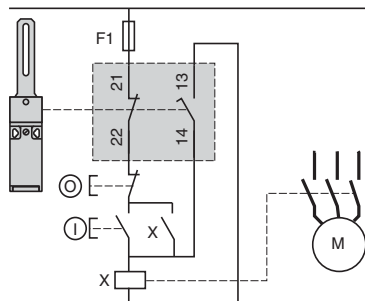
(1) 1 cable entry tapped M16 x 1.5
Ø: 2 elongated holes Ø 4.3 x 8.3 on 22 centres,
2 holes Ø 4.3 on 20 centres
L = 30 (XCS PR●52) or 80 (XCS PR●62)

(1) 2 cable entries tapped M16 x 1.5
(2) 2 elongated holes Ø 4.3 x 8.3 on 22 centres,
2 holes Ø 4.3 on 20 centres
(3) 2 elongated holes Ø 5.3 x 13.3
L = 30 (XCS TR●52) or 80 (XCS TR●62)

Wiring schemes

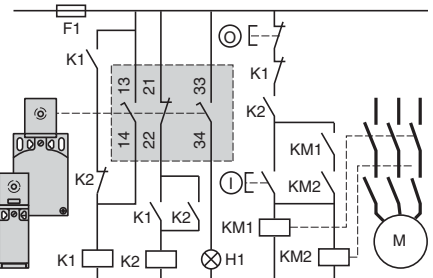
Category 1 to EN 954-1/ISO 13849-1

Example with cable short-circuit protection fuse



Category 3 to EN 954-1/ISO 13849-1

Example with 3-pole N/C + N/O + N/O contact with mixed redundancy of the contacts and the associated control relays.



To activate K1, the lever or spindle must be rotated when the supply is switched on. H1: "lever or spindle displaced from initial position" indicator. When used in conjunction with an XPS safety module and another safety switch, the rotary lever or spindle operator guard switch can provide a category 3 or 4 control and monitoring system for moving guards to EN 954-1/ISO 13849-1.

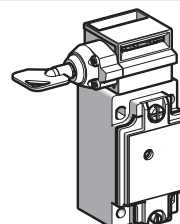
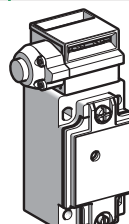
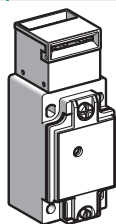
Safety detection solutions

Guard switches

Metal, turret head ⁽¹⁾, types XCS A, XCS B, XCS C and XCS E

1 or 2 cable entries M20 x 1.5 ⁽²⁾

Type of switch	Without locking of actuator	With locking of actuator, manual unlocking ⁽³⁾
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LED indication on opening of N/C contacts	Without	1 orange LED ≈ 24/48 V	Without	Without
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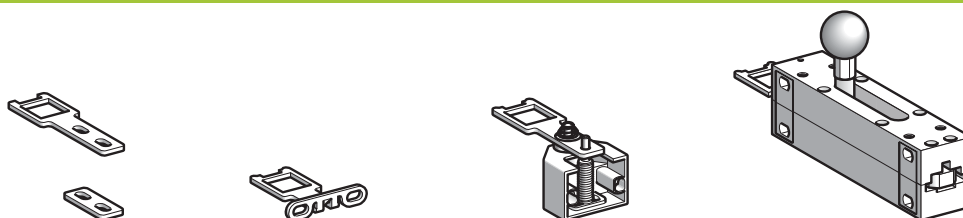
References of switches without actuator (⊖ N/C contact with positive opening operation)

3-pole N/C + N/O + N/O (2 N/O staggered) slow break (4)		XCS A502 ⊖	XCS A512 ⊖	XCS B502 ⊖	XCS C502 ⊖
3-pole N/C + N/C + N/O (N/O staggered) slow break (4)		XCS A702 ⊖	XCS A712 ⊖	XCS B702 ⊖	XCS C702 ⊖
3-pole N/C + N/C + N/C slow break (4)		XCS A802 ⊖	—	—	—
Weight (kg)		0.440	0.440	0.475	0.480

Characteristics

Actuation speed	Maximum: 0.5 m/s, minimum: 0.01 m/s
Resistance to forcible withdrawal of actuator	XCS B and XCS C : 1500 N; XCS E : 2000 N
Mechanical durability	XCS A and XCS E : > 1 million operating cycles XCS B and XCS C : 0.6 million operating cycles
Maximum operating rate	For maximum durability: 600 operating cycles per hour
Minimum force for extraction of actuator	≥ 20 N
Cable entry	XCS A , XCS B , XCS C : 1 cable entry. XCS E : 2 cable entries Entries tapped M20 x 1.5 for ISO cable gland. Clamping capacity 7 to 13 mm
Materials	Body: zamak. Head: zamak. Safety screws: 5-lobe torque. Protective plate: steel.

References of actuators



Description	Straight actuator	Actuator with wide fixing	Pivoting actuator	Latch for sliding doors (Padlockable in open position)
For guard switches XCS A, B, C, E	XCS Z01	XCS Z02	XCS Z03	XCS Z05
Weight (kg)	0.020	0.020	0.095	0.600

⁽¹⁾ Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.

⁽²⁾ For cable entries tapped for n° 13 (Pg 13.5) cable gland, replace the last number in the reference (2) by 1.

Example: **XCS A502** becomes **XCS A501**.

⁽³⁾ Unlocking by pushbutton for **XCS B●●●** and by key operated lock for **XCS C●●●**.

⁽⁴⁾ Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

Other versions: please consult your Regional Sales Office.

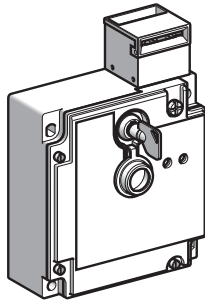
Safety detection solutions

Guard switches

Metal, turret head ⁽¹⁾, types XCS A, XCS B, XCS C and XCS E

1 or 2 cable entries M20 x 1.5 ⁽²⁾

Type of switch	With interlocking, locking by solenoid
----------------	--



Type of interlocking	Locking on de-energisation and unlocking on energisation of solenoid (3). To order a guard switch with locking on energisation and unlocking on de-energisation of the solenoid, replace the 2nd number (3) by 5 in the references shown below. Example: XCS E5312 becomes XCS E5512..							
LED indication	Orange LED: "guard open" signalling. Green LED: "guard closed and locked" signalling.							
Supply voltage of solenoid	~ or --- 24 V (50/60 Hz on ~)	~ or --- 48 V (50/60 Hz on ~)	~ or --- 110/120 V (4) (50/60 Hz on ~)	~ or --- 220/240 V (4) (50/60 Hz on ~)				
Type of contact on solenoid	N/C + N/O	2 N/C	N/C + N/O	N/C + N/O	2 N/C	N/C + N/O	2 N/C	
References of switches without actuator (⊕ N/C contact with positive opening operation)								
3-pole N/C + N/O + N/O (2 N/O staggered) slow break (5)		XCS E5312 ⊕	—	—	—	—	XCS E5342 ⊕	—
3-pole N/C + N/C + N/O (N/O staggered) slow break (5)		XCS E7312 ⊕	XCS E73127 ⊕	—	XCS E7332 ⊕	XCS E73327 ⊕	XCS E7342 ⊕	XCS E73427 ⊕
3-pole N/C + N/C + N/C slow break (5)		XCS E8312 ⊕ (6)	XCS E83127 ⊕ (6)	XCS E8322 ⊕ (6)	—	—	—	—
Weight (kg)	1.140	1.140	1.140	1.140			1.140	

Solenoid characteristics							
Load factor	100%						
Rated operational voltage	$\sim$ or --- 24 V	$\sim$ or --- 24 V	$\sim$ or --- 48 V	$\sim$ or --- 110/120 V	$\sim$ or --- 220/240 V		
Voltage limits	- 20%, + 10% of the rated operational voltage (including ripple on ---) conforming to IEC/EN 60947-1						
Service life	20 000 hours						
Consumption	Inrush: 10 VA. Sealed: 10 VA						

LED indicator characteristics		
Rated insulation voltage	50 V conforming to IEC/EN 60947-1	250 V conforming to IEC/EN 60947-1
Current consumption	7 mA	7 mA
Rated operational voltage	$\sim$ or --- 24/48 V	$\sim$ 110/240 V
Voltage limits	$\sim$ or --- 20...52 V (including ripple)	$\sim$ 95...264 V (including ripple)
Service life	100 000 hours	100 000 hours
Protection against overvoltages	Yes	Yes

(1) Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.

(2) For cable entries tapped for n° 13 (Pg 13.5) cable gland, replace the last number in the reference (2) by 1).

Example: XCS E5312 becomes XCS E5311.

(3) A key operated lock enables forced opening of the interlocking mechanism, by authorised personnel, allowing withdrawal of the actuator and subsequent opening of the N/C safety contacts.

(4) For use on --- 110/120 V or --- 220/240 V, remove the LED indicator module.

(5) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

(6) Switches supplied with a single green LED.

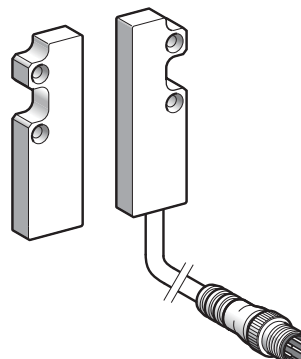
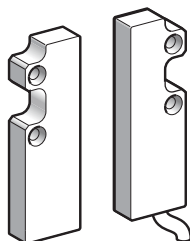
Other versions: please consult your Regional Sales Office.

XCS DMC

Rectangular, compact: 51 x 16 x 7

Pre-cabled connection

Connector on flying lead connection



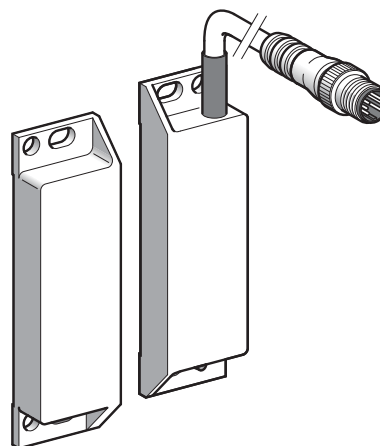
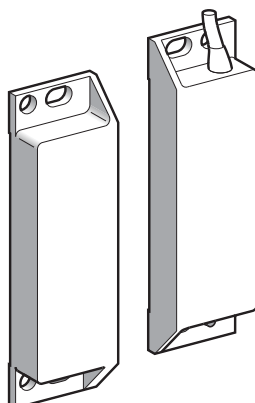
Pages 5/174 and 5/175

XCS DMP

Rectangular, standard: 88 x 25 x 13

Pre-cabled connection

Connector on flying lead connection



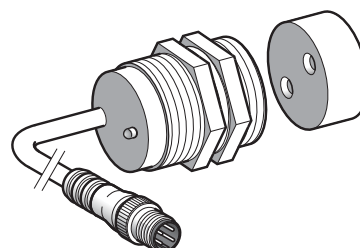
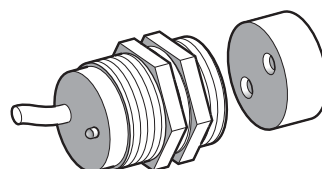
Pages 5/174 and 5/175

XCS DMR

Cylindrical, diameter: 30, length: 38.5

Pre-cabled connection

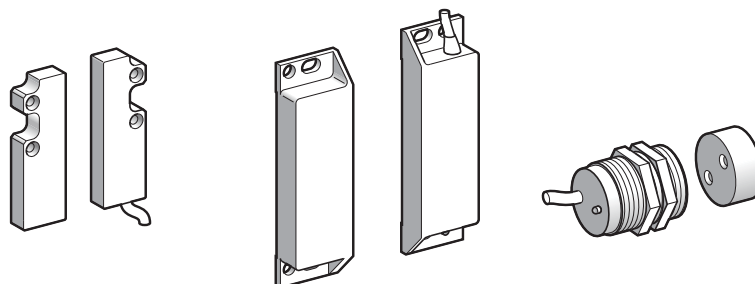
Connector on flying lead connection



Pages 5/174 and 5/175

Environment			
Conformity to standards	Products		IEC/EN 60947-5-1, UL 508, CSA C22 2 n° 14
	Machine assemblies		IEC/EN 60204-1, EN/ISO 12100, EN 1088/ISO 14119 (XCS DM●5●● only)
Product certifications			UL-CSA, BG
Protective treatment			Standard version: "TH"
Ambient air temperature	For operation	°C	- 25...+ 85
	For storage	°C	- 40...+ 85
Vibration resistance			10 gn (10...150 Hz) conforming to IEC 60068-2-6
Shock resistance			30 gn (11 ms) conforming to IEC 60068-2-7
Sensitivity to magnetic fields		mT	≥ 0.3
Electric shock protection			Class II conforming to IEC 60536
Degree of protection	Conforming to IEC 60529		IP 66 and IP 67 for coded magnetic switches with pre-cabled connection IP 67 for coded magnetic switches with connector on flying lead connection
	Materials		Thermoplastic case (PBT) PVC cable (ROHS)
Contact block characteristics			
Rated operational characteristics			Ue: ~ 24 V, Ie: 100 mA max.
Rated insulation voltage (Ui)			Ui: ~ 100 V
Rated impulse withstand voltage (U imp)		kV	2.5 conforming to EN/IEC 60947-5-1
Resistance across terminals	Contact with LED	Ω	57
	Contact without LED	Ω	10
Protection (not using safety module)			External cartridge fuse: 500 mA gG (gl)
Connection	XCS DMC		Pre-cabled, 4 x 0.25 mm², length: 2, 5 or 10 m depending on model or M8 connector on 0.15 m flying lead
	XCS DMP 2 contact model		Pre-cabled, 4 x 0.25 mm², length: 2, 5 or 10 m depending on model or M12 connector on 0.15 m flying lead
	3 contact model		Pre-cabled, 6 x 0.25 mm², length: 2, 5 or 10 m depending on model or M12 connector on 0.15 m flying lead
	XCS DMR		Pre-cabled, 4 x 0.25 mm², length: 2, 5 or 10 m depending on model or M12 connector on 0.15 m flying lead
Contact material			Rhodium
Electrical durability			1.2 million operating cycles
Maximum switching voltage		V	~ 100
Switching capacity	Contact with LED	mA	5...100
	Contact without LED	mA	0.1...100
Insulation resistance		MW	1000
Maximum breaking capacity	Contact with LED	VA	3
	Contact without LED	VA	10
Maximum switching frequency		Hz	150

Type	Rectangular		Cylindrical
	Compact 51 x 16 x 7	Standard 88 x 25 x 13	Diameter 30 Length 38.5


References of switches (1) Δ must be used in conjunction with safety modules XPS, see pages 5/180 to 5/182

Contact states shown are with the magnet positioned in front of the switch

2-pole N/C + N/O (N/C staggered)		XCS DMC5902	XCS DMP5902	XCS DMR5902
2-pole N/O + N/O (2) (1 N/O staggered)		XCS DMC7902	XCS DMP7902	XCS DMR7902
3-pole N/C + N/C + N/O (1 N/C staggered)		—	XCS DMP5002	—
3-pole N/C + N/O + N/O (2) (1 N/O staggered)		—	XCS DMP7002	—
2-pole N/C + N/O (N/C staggered)		XCS DMC5912	XCS DMP5912	XCS DMR5912
2-pole N/O + N/O (2) (1 N/O staggered)		XCS DMC7912	XCS DMP7912	XCS DMR7912
3-pole N/C + N/C + N/O (1 N/C staggered)		—	XCS DMP5012	—
3-pole N/C + N/O + N/O (2) (1 N/O staggered)		—	XCS DMP7012	—
Weight (kg)		0.101	0.180	0.146

(1) Magnetic switch + coded magnet (XCS ZC●●●●).

Switch pre-cabled with 2 m long cable. For other cable lengths, replace the last number of the reference (2) by 5 for a 5 m long cable or by 10 for a 10 m long cable.

Example: rectangular, compact switch with N/C + N/O contacts and 10 m cable becomes XCS DMC59010.

(2) Only to be wired in conjunction with an XPS AF module (see page 5/181).

Complementary characteristics not shown under General characteristics (page 5/175)

Operating zone	Sao: 5 mm Sar: 15 mm	Sao: 8 mm Sar: 20 mm	Sao: 8 mm Sar: 20 mm
Approach directions	3 directions	3 directions	1 direction

Accessories (page 5/176)

Type	Rectangular	Standard	Cylindrical
	Compact 51 x 16 x 7	88 x 25 x 13	Diameter 30 Length 38.5
	M8 connector	M12 connector	M12 connector

References of switches (1) Δ must be used in conjunction with safety modules XPS, see pages 5/180 to 5/182

Contact states shown are with the magnet positioned in front of the switch

2-pole N/C + N/O (N/C staggered)		XCS DMC590L01M8	XCS DMP590L01M12	XCS DMR590L01M12
2-pole N/O + N/O (2) (1 N/O staggered)		XCS DMC790L01M8	XCS DMP790L01M12	XCS DMR790L01M12
3-pole N/C + N/C + N/O (1 N/C staggered)		—	XCS DMP500L01M12	—
3-pole N/C + N/O + N/O (2) (1 N/O staggered)		—	XCS DMP700L01M12	—
2-pole N/C + N/O (N/C staggered)		XCS DMC591L01M8	XCS DMP591L01M12	XCS DMR591L01M12
2-pole N/O + N/O (2) (1 N/O staggered)		XCS DMC791L01M8	XCS DMP791L01M12	XCS DMR791L01M12
3-pole N/C + N/C + N/O (1 N/C staggered)		—	XCS DMP501L01M12	—
3-pole N/C + N/O + N/O (2) (1 N/O staggered)		—	XCS DMP701L01M12	—
Weight (kg)		0.101	0.180	0.146

(1) Magnetic switch + coded magnet (XCS ZC●●●●●).

(2) Only to be wired in conjunction with an XPS AF module (see page 5/181).

Complementary characteristics not shown under General characteristics (page 5/175)

Operating zone	Sao: 5 mm Sar: 15 mm	Sao: 8 mm Sar: 20 mm	Sao: 8 mm Sar: 20 mm
Approach directions	3 directions	3 directions	1 direction

Accessories (page 5/176)

Accessories

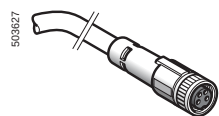
Accessories for coded magnetic switches	XCS DMC●●●2 XCS DMC●●●L	XCS DMP●●●2 XCS DMP●●●L	XCS DMR●●●2 XCS DMR●●●L
Fixing clamp	—		XSZ B130
Weight (kg)	—		0.080
Additional coded magnet	XCS ZC1	XCS ZP1	XCS ZR1
Weight (kg)	0.009	0.050	0.018
Non-magnetic shims	XCS ZCC (lot of 2)	XCS ZCP (lot of 2)	XCS ZCR
Weight (kg)	0.008	0.012	0.002

Pre-wired female connectors for connector version switches

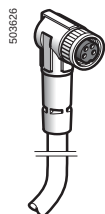
Pre-wired connector characteristics

Pre-wired connector type	XZ CP0941L●, XZ CP1041L●	XZ CP29P11L●	XZ CP1141L●, XZ CP1241L●
Type of connection	Screw threaded (metal clamping ring)	Screw threaded (metal clamping ring)	Screw threaded (metal clamping ring)
Number of contacts	4	8	4
Degree of protection	IP 67 (with clamping ring correctly tightened)		
Ambient air temperature	Static	- 35...+ 90 °C	- 35...+ 90 °C
	Dynamic	- 5...+ 90 °C	- 5...+ 90 °C
Cabling	Ø 5.2 mm cable, wire c.s.a.: 4 x 0.34 mm ²	Ø 5.2 mm cable, wire c.s.a.: 8 x 0.25 mm ²	Ø 5.2 mm cable, wire c.s.a.: 4 x 0.34 mm ²
LED signalling	—	—	—
Nominal voltage	~ 60 V, --- 75 V	~ 250 V, --- 300 V	~ 250 V, --- 300 V
Nominal current	4 A	2 A	4 A
Insulation resistance	> 10 ⁹ Ω	> 10 ⁹ Ω	> 10 ⁹ Ω
Contact resistance	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ

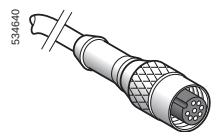
References of pre-wired connectors



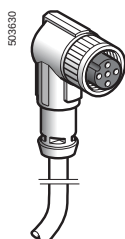
XZ CP0941L●



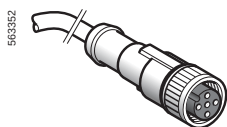
XZ CP1041L●



XZ CP29P11L●



XZ CP1241L●

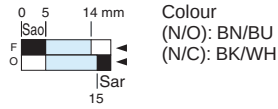


XZ CP1141L●

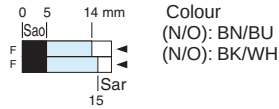
Type of connector	Number of pins	For use with	Type	Cable length m	Reference	Weight kg
Female, M8	4	XCS DMC●●●L	Straight	2	XZ CP0941L2	0.080
				5	XZ CP0941L5	0.180
				10	XZ CP0941L10	0.360
			Elbowed	2	XZ CP1041L2	0.080
				5	XZ CP1041L5	0.180
				10	XZ CP1041L10	0.360
Female, M12	8	XCS DMP●●●L	Straight	2	XZ CP29P11L2	0.100
				5	XZ CP29P11L5	0.290
				10	XZ CP29P11L10	0.470
			Elbowed	2	XZ CP1141L2	0.090
				5	XZ CP1141L5	0.190
				10	XZ CP1141L10	0.370
Female, M12	4	XCS DMR●●●L/ XCS DMP●●●L	Straight	2	XZ CP1241L2	0.090
				5	XZ CP1241L5	0.190
				10	XZ CP1241L10	0.370
			Elbowed	2	XZ CP1241L2	0.090
				5	XZ CP1241L5	0.190
				10	XZ CP1241L10	0.370

Function diagrams with magnet present (pre-cabled version)

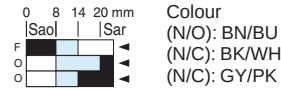
XCS DMC59●●



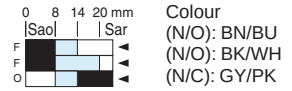
XCS DMC79●●



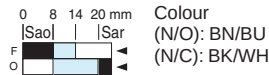
XCS DMP50●●



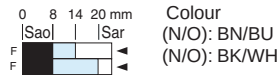
XCS DMP70●●



XCS DMR59●●/XCS DMP59●●

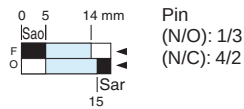


XCS DMR79●●/XCS DMP79●●

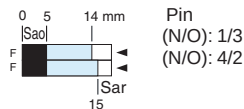


Function diagrams with magnet present (connector on flying lead version)

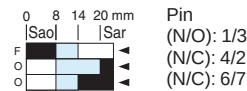
XCS DMC59●●



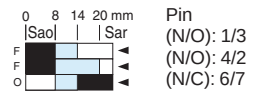
XCS DMC79●●



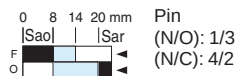
XCS DMP50●●



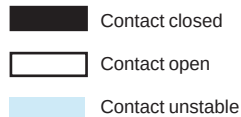
XCS DMP70●●



XCS DMR59●●/XCS DMP59●●



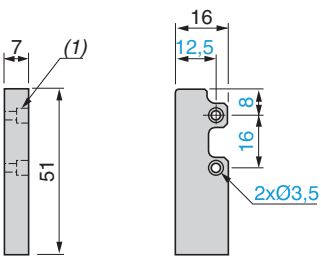
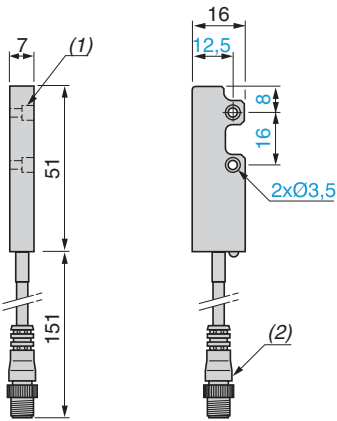
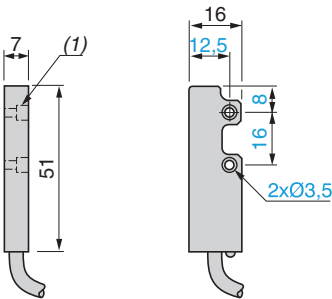
XCS DMR79●●/XCS DMP79●●



Sao: assured operating distance.
Sar: assured tripping distance.
Conforming to EN/IEC 60947-5-3.

Coded magnetic switches

XCS DMC		Coded magnet for XCS DMC
Pre-cabled connection	Connector on flying lead connection	XCS ZC1

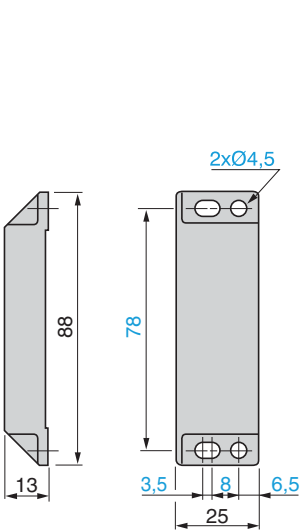
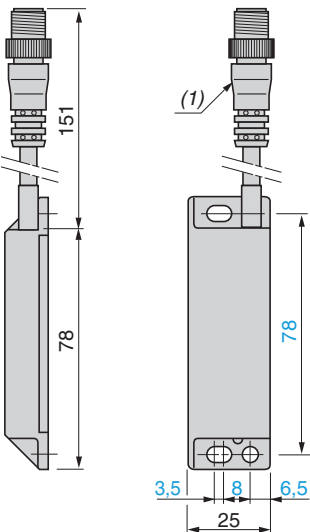
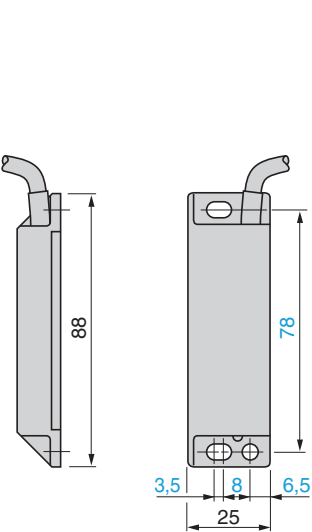


(1) Counterbored: Ø 6 x 3.5 mm.

(1) Counterbored: Ø 6 x 3.5 mm.
(2) M8 4-pin connector.

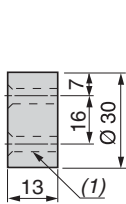
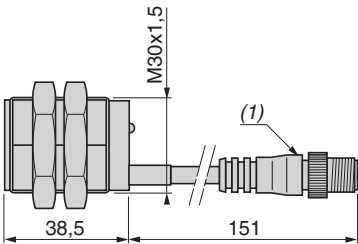
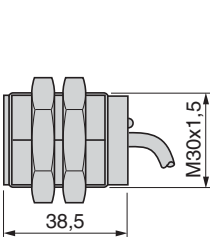
(1) Counterbored: Ø 6 x 3.5 mm.

XCS DMP		Coded magnet for XCS DMP
Pre-cabled connection	Connector on flying lead connection	XCS ZP1



(1) 4 or 6-pin M12 connector.

XCS DMR		Coded magnet for XCS DMR
Pre-cabled connection	Connector on flying lead connection	XCS ZR1

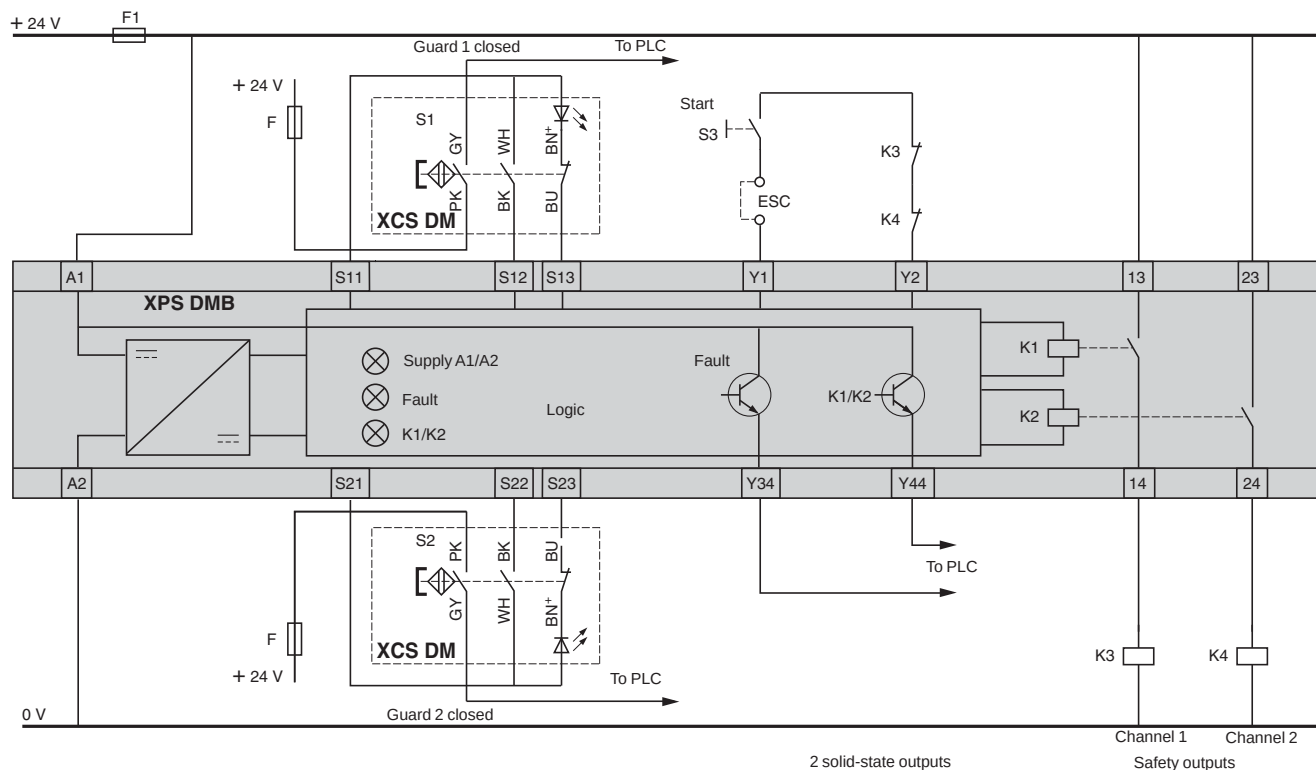


(1) M12 4-pin connector.

(1) 2 x Ø 4.3, countersunk: Ø 7.5 at 45°.

XCS DMP5... with XPS DMB

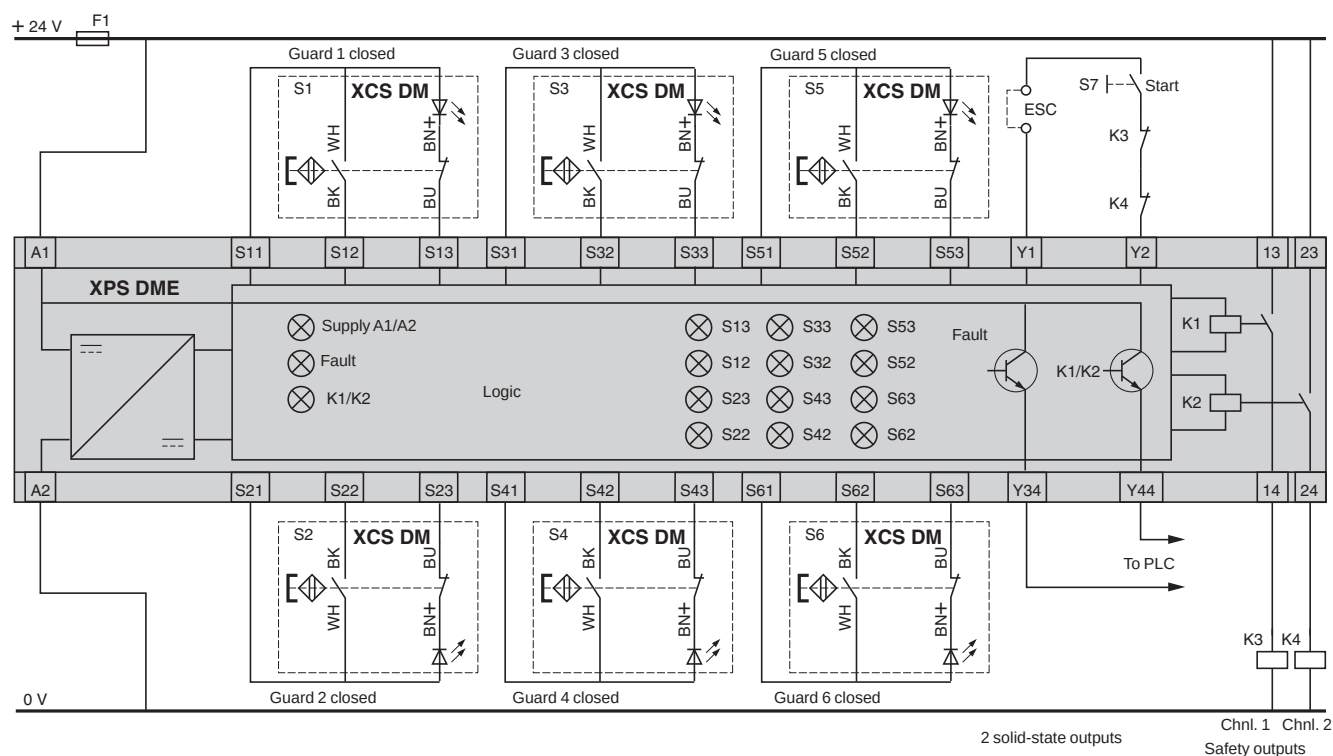
Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 3-pole N/C + N/C + N/O (1 N/C staggered) contact.



ESC: External start conditions.

XCS DMC5..., XCS DMP5..., XCS DMR5... with XPS DME

Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 2-pole N/C + N/O (N/C staggered) contact.



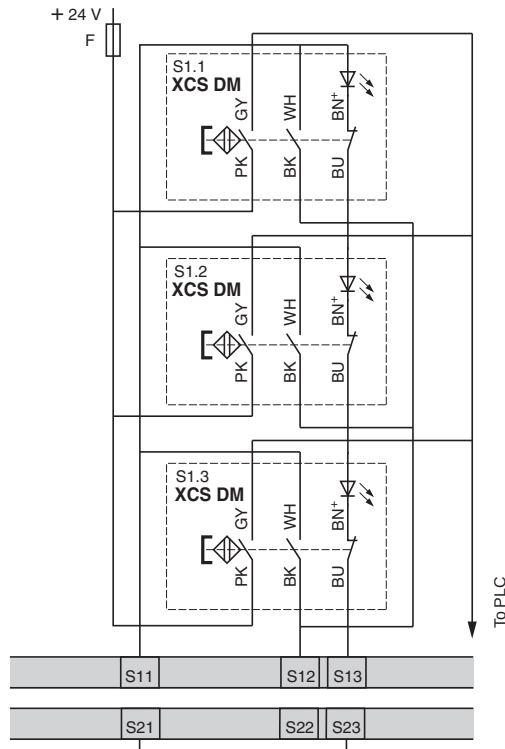
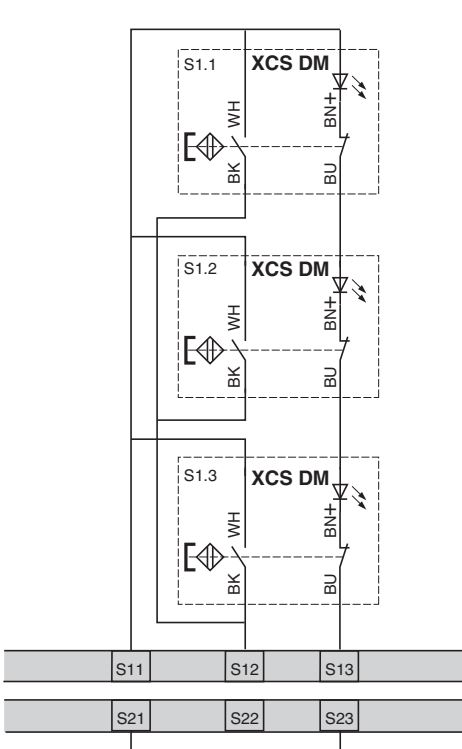
ESC: External start conditions.

Connection of up to 3 magnetic switches, with an LED on one input, with XPS DM● (1)

Wiring to category 3 conforming to EN 954-1/ISO 13849-1

Example with 2-pole N/C + N/O contact

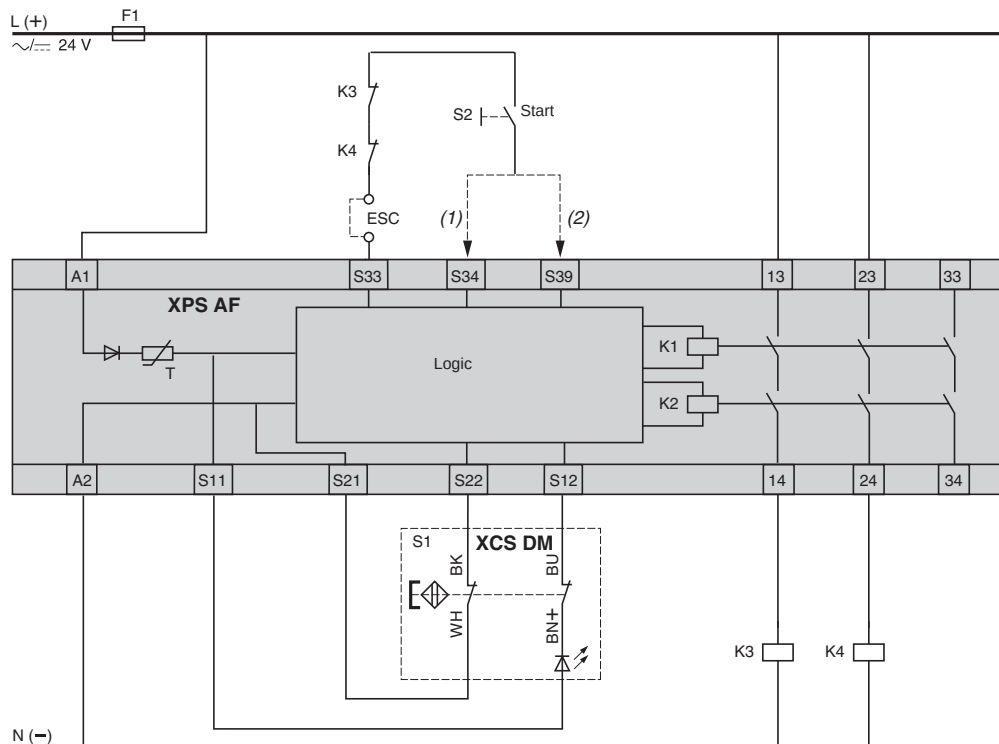
Example with 3-pole N/C + N/C + N/O contact



(1) Input: S11, S12, S13 or S21, S22, S23.

XCS DM●7●●● with XPS AF

Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 2-pole N/C + N/C contact (not conforming to standard EN 1088/ISO 14119)



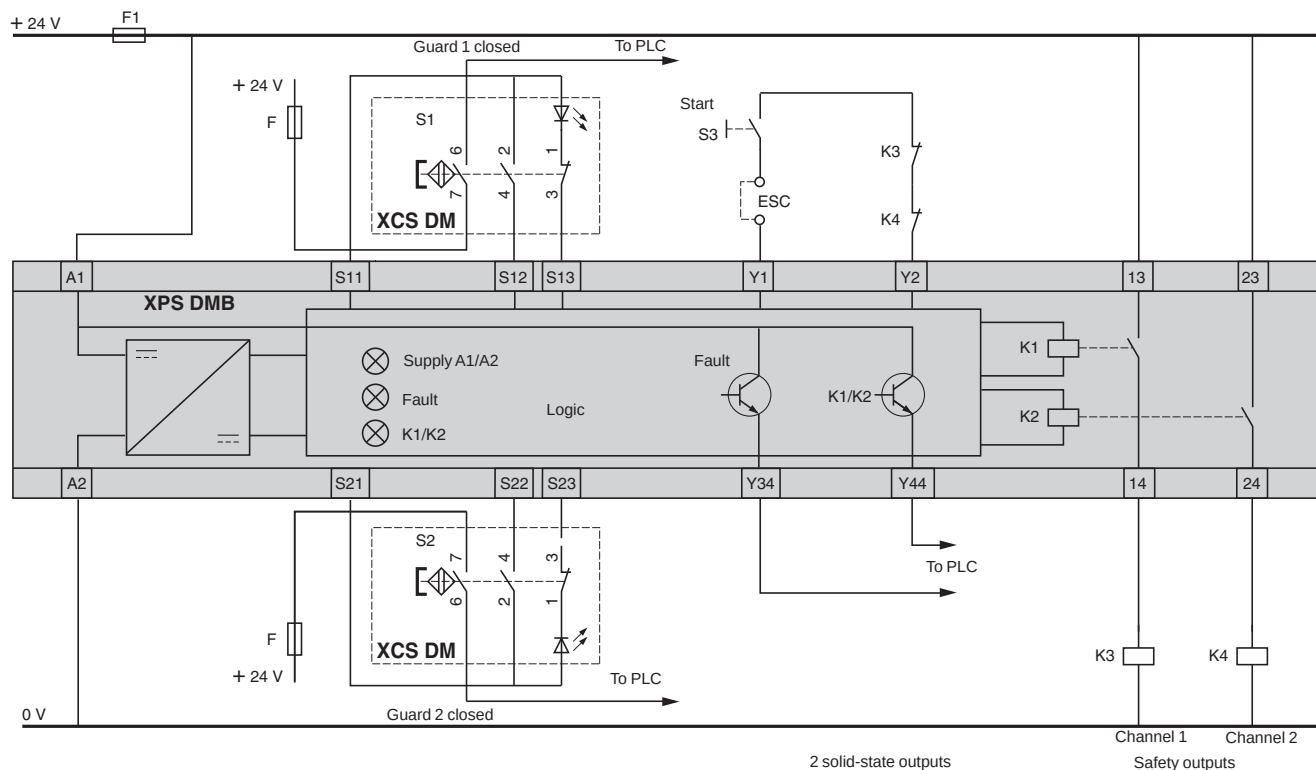
(1) With start button monitoring.

(2) Without start button monitoring.

ESC: External start conditions.

XCS DMP5... with XPS DMB

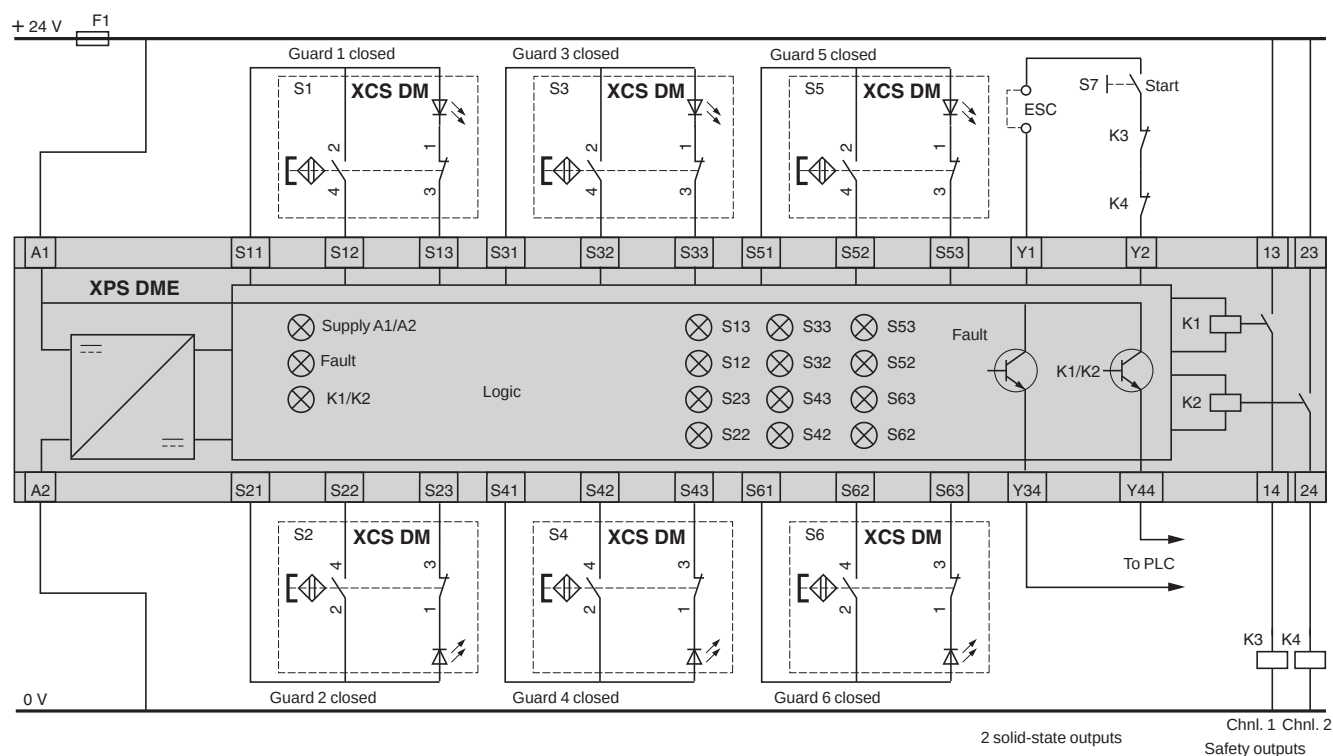
Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 3-pole N/C + N/C + N/O (1 N/C staggered) contact.



ESC: External start conditions.

XCS DMC5..., XCS DMP5..., XCS DMR5... with XPS DME

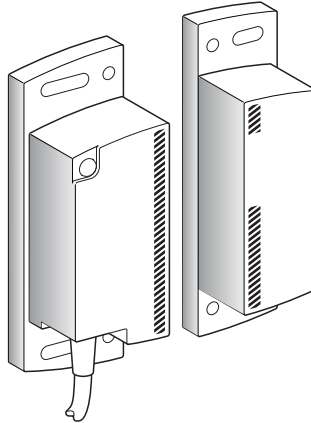
Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Example with 2-pole N/C + N/O (N/C staggered) contact.



ESC: External start conditions.

Coded magnetic system Pre-cabled connection

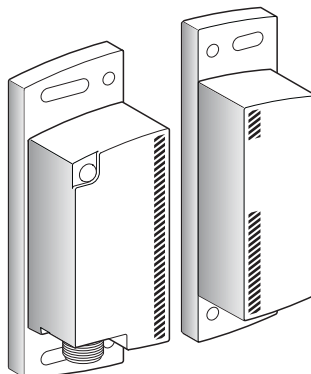
SIL 2 and 3/Categories 3 and 4
XCS DM3791●● /XCS DM4801●●



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Coded magnetic system M12 connector connection

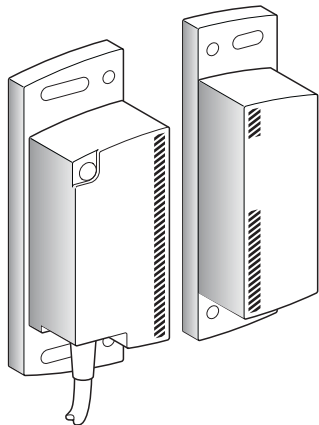
SIL 2 and 3/Categories 3 and 4
XCS DM3791M12/ XCS DM4801M12



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Coded magnetic system type			SIL2/Category 3 XCS DM3		SIL3/Category 4 XCS DM4	
Environment						
Conformity to standards			IEC 61508, EN/IEC 62061(SIL2 and SIL3), EN 13849-1 (Category 3 and Category 4), EN 1088/ISO 14119, EN/IEC 60947-5-1; EN/IEC 60947-5-2 ; EN/IEC 60947-5-3			
Product certifications			CE, UL, CSA, TÜV			
Ambient air temperature	For operation	°C	-25...+70°C			
	For storage	°C	-40...+85°C			
Vibration resistance	Conforming to IEC 60068-2-6		10 gn (10...500 Hz)			
Shock resistance	Conforming to IEC 60068-2-7		30 gn, 11 ms			
Sensitivity to magnetic fields		mT	≤ 0,5			
Electric shock protection	Conforming to IEC 61140		Class III			
Degree of protection	Conforming to IEC 60529		Pre-cabled version: IP 66, IP 67 Connector version: IP 67			
	Conforming to DIN 40050		Pre-cabled version: IP 69K			
Materials			Thermoplastic case (PBT); PVC cable			
Characteristics						
Rated operational characteristics			Ub : ∓ 24 V + 10% - 20%			
Rated insulation voltage (Ui)			Ui : ∓ 36V			
Rated impulse withstand voltage (U imp)	Conforming to EN 60947-5-1	kV	2,5			
Integrated output protection			Overload and short-circuit protection			
Connection	Conforming to IEC 60947-5-2-A3 and IEC 61076		Pre-cabled, 6 x 0.25 mm², length: 2, 5 or 10 m depending on model or M12 connector (A coding)	Pre-cabled, 8 x 0.25 mm², length: 2, 5 or 10 m depending on model or M12 connector		
Cable diameter		mm	6,1 +/-0,3			
Cable resistance		mΩ/m	90			
Safety outputs (OSSD) (Output Signal Switching Devices)			2 PNP type (NO) solid-state outputs, 1.5 A (2 A up to 60°C), ∓ 24 V (short-circuit protected)			
Alarm output			–		1 solid-state output, 0.5 A, ∓ 24 V, PNP	
Signalling			LED (green/red/orange)			
Maximum switching frequency		Hz	3			
Activation delay		ms	100			
Discordance time		s	2			
HFT (Hardware Fault Tolerance)			1			
		Test interval: 12 months				
Tightening torque		Nm	1,8 maxi.		–	
Chaining in series			32 maximum with 2 m long cable			
Functions						
Functions			- LED status signalling		- Auto/Manual start via “Start”input - Monitoring of external switching devices (EDM: External Devices Monitoring) - Display of operating modes (LED) - Monitoring of the function (open or closed) as well as the response time of the power components.	

Type	Magnetic system with dedicated transmitter
	Pre-cabled connection



References				
Description	Type of connection	SIL2/Category 3	SIL3/Category 4	Weight kg
Magnetic system with dedicated transmitter (1)	Pre-cabled, L = 2 m	XCS DM379102	XCS DM480102	0,320
	Pre-cabled, L = 5 m	XCS DM379105	XCS DM480105	0,480
	Pre-cabled, L = 10 m	XCS DM379110	XCS DM480110	0,745

(1) Self-contained system not requiring use of safety module or non-magnetic shim.

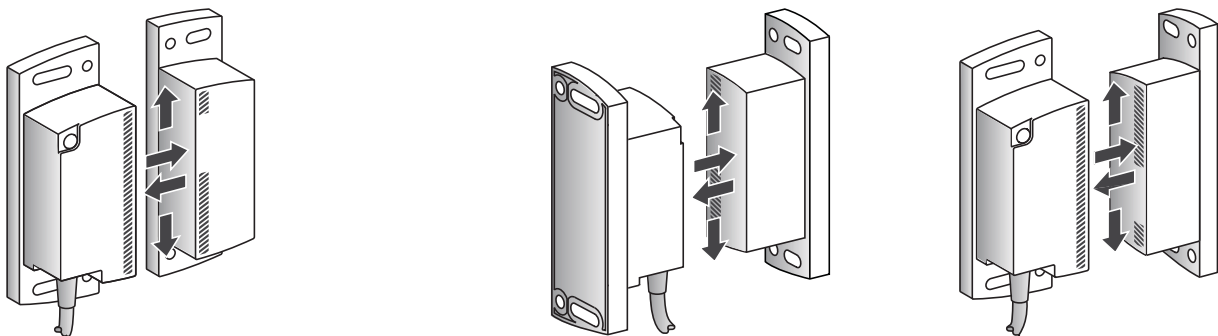
Detection characteristics	
Assured operating distance	Sao : 10 mm
Assured tripping distance	Sar : 20 mm
Approach directions	9
Approach speed	0,01 m/s mini

Output status (pre-cabled connection)
Output states shown are with the dedicated transmitter positioned in front of the receiver.

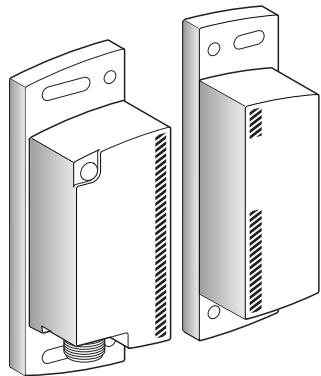
XCS DM3791●●	XCS DM4801●●
	Er - VT(NC) ON OFF "OFF" = Error

	Sao : Assured operating distance. Sar : Assured tripping distance. Conforming to EN/IEC 60947-5-3
--	---

Approach directions



Type	Magnetic system with dedicated transmitter
	M12 connector connection



References				
Description	Type of connection	SIL3/Category 3	SIL4/Category 4	Weight kg
Magnetic system with dedicated transmitter (1)	M12 connector	XCS DM3791M12	XCS DM4801M12	0,215

1) Self-contained system not requiring use of safety module or non-magnetic shim.

Detection characteristics	
Assured operating distance	Sao : 10 mm
Assured tripping distance	Sar : 20 mm
Approach directions	9
Approach speed	0,01 m/s mini

Output status (pre-cabled connection)
Output states shown are with the dedicated transmitter positioned in front of the receiver.

XCS DM3791M12	XCS DM4801M12
0 10 14 20 Sao I1/O1 - 7/4 (NO) I2/O2 - 6/2 (NO) Sar	0 10 14 20 Sao I1/O1 - 5/4 (NO) I2/O2 - 6/4 (NO) Sar Er-7(NC) ON OFF "OFF" = Error

	Output closed
	Output open
	Transitional state

Sao : Assured operating distance.
Sar : Assured tripping distance.
Conforming to EN/IEC 60947-5-3

Accessories			
Description	For use with	Reference	Weight kg
Replacement dedicated transmitter	XCS DM3/4●●●02/05/10 XCS DM3/4●●●M12	XCS DMT	0,100
Arc suppressor (pair)	XCS DM3/4●●●02/05/10 XCS DM3/4●●●M12	XUS LZ500	0,020

Pre-wired female connectors for connector version coded magnetic systems

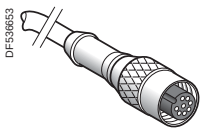
Pre-wired connector characteristics

Pre-wired connector type		XZ CP29P12L●	
Type of connection		Screw threaded (metal clamping ring)	
Number of contacts		8	
Degree of protection		IP 67 (with clamping ring correctly tightened)	
Ambient air temperature	Operation	°C	- 25 ... + 70
	Storage	°C	- 40 ... + 85
Cabling	Conforming to IEC 60947-5-2		Ø 6.1 mm PUR cable, wire c.s.a.: 8 x 0.25 mm ²
LED signalling			–
Nominal current		A	2
Insulation resistance		Ω	> 10 ⁹
Contact resistance		mΩ	≤ 5

References of pre-wired connectors

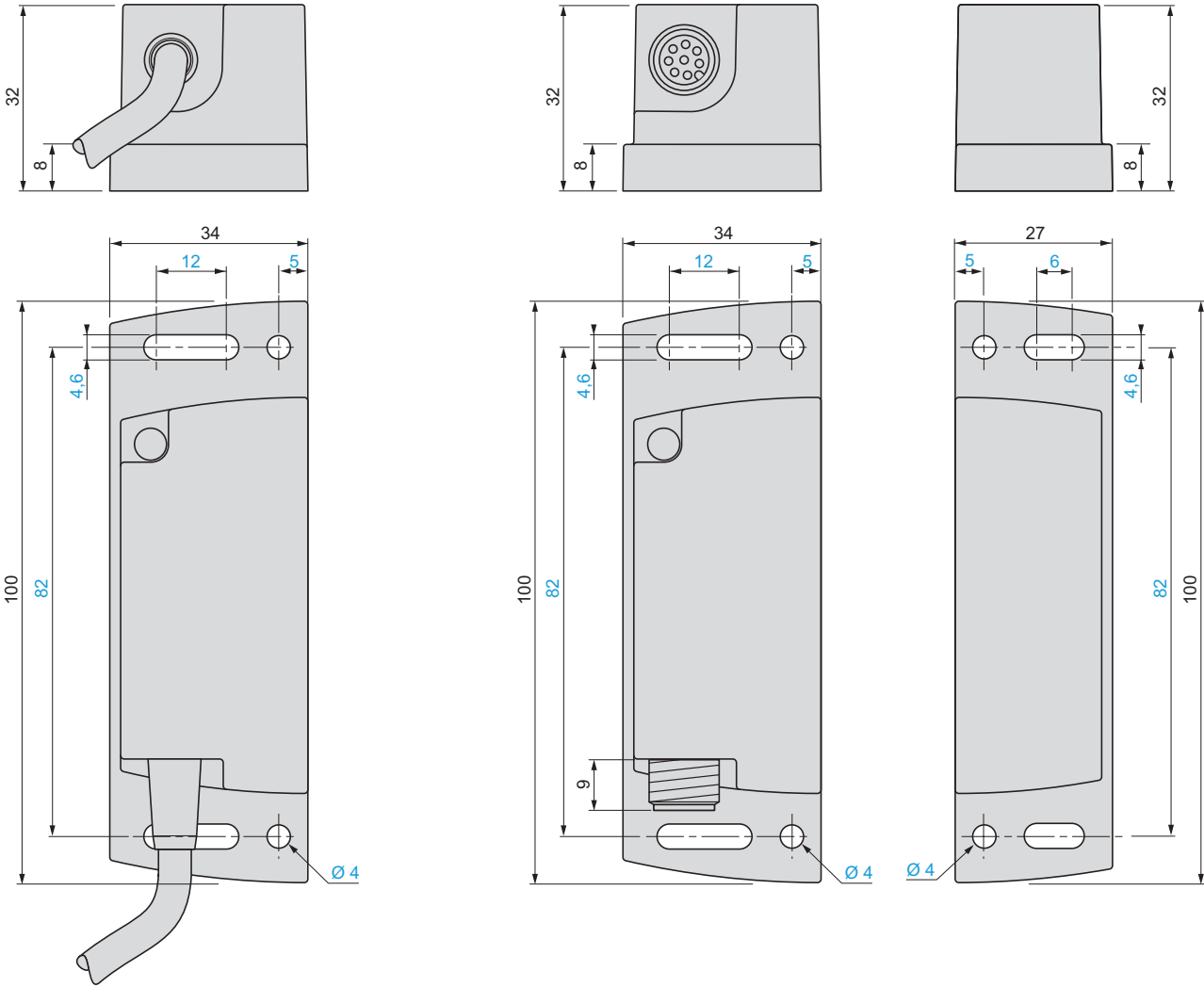
Type of connector	No. of contacts	For use with	Type	Cable length m	Reference	Weight kg
Female, M12 (Coding A)	8	XCS DM3/4●●●02 XCS DM3/4●●●05 XCS DM3/4●●●10	Straight	2	XZ CP29P12L2	0,100
				5	XZ CP29P12L5	0,290
				10	XZ CP29P12L10	0,470

5



XZ CP29P12L●

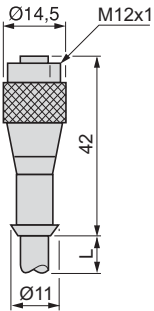
Coded magnetic systems		Accessory
Pre-cabled connection	M12 connector (Coding A) connection	Replacement dedicated transmitter
XCS DM3/4●●●02/05/10	XCS DM3/4●●●M12	XCS DMT



5

Pre-wired female connectors

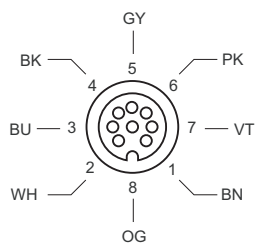
XZ CP29P12L●



Connection

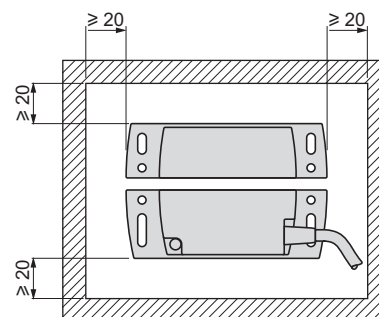
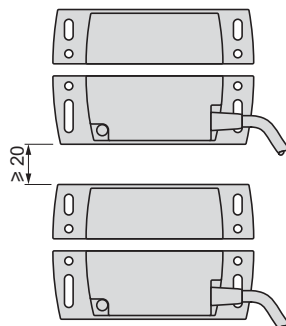
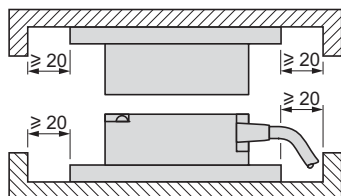
M12 pre-wired female connector

XZ CP29P12L●



Mounting

XCS DM3/DM4

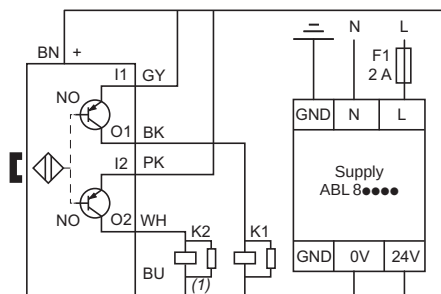


Schemes

Category 3 (this Category 3 scheme can attain SIL2)

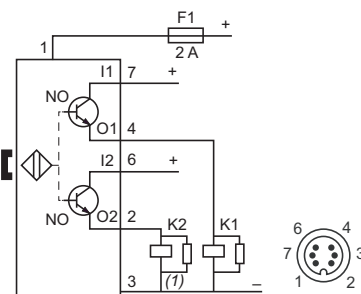
Pre-cabled connection

XCS DM3791●●



M12 connector (A coding) connection

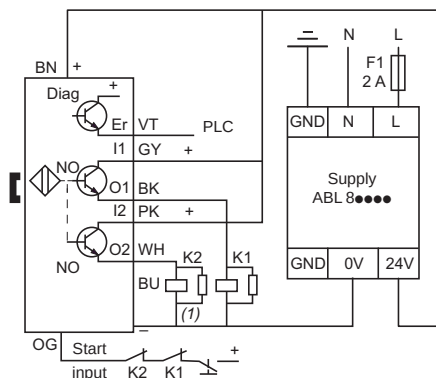
XCS DM3791M12



SIL3/Category 4

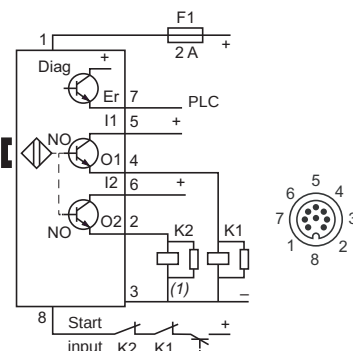
Pre-cabled connection

XCS DM4801●●



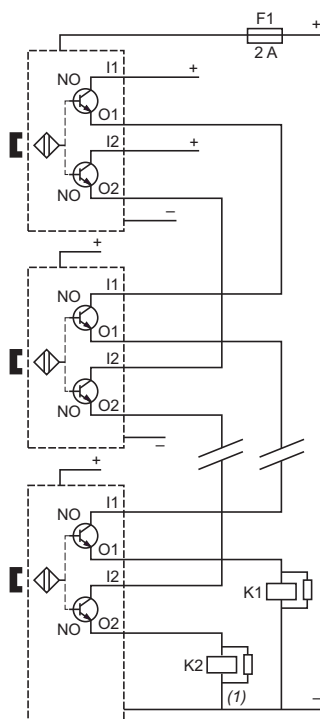
M12 connector (A coding) connection

XCS DM4801M12



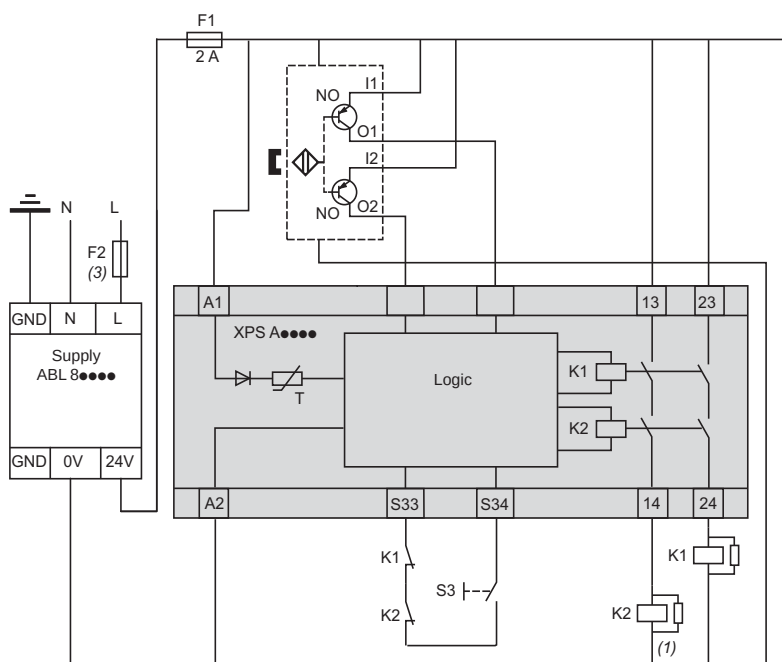
Chaining coded magnetic systems (1)

XCS DM3791●●



Wiring to SIL3/Category 4 with Preventa module

Example: XCS DM3●●●● + XPS AFL5130



- (1) Mechanically linked contacts
 (2) Maximum chaining: 32 maximum with 2 m long cable.
 (3) 2A maxi

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

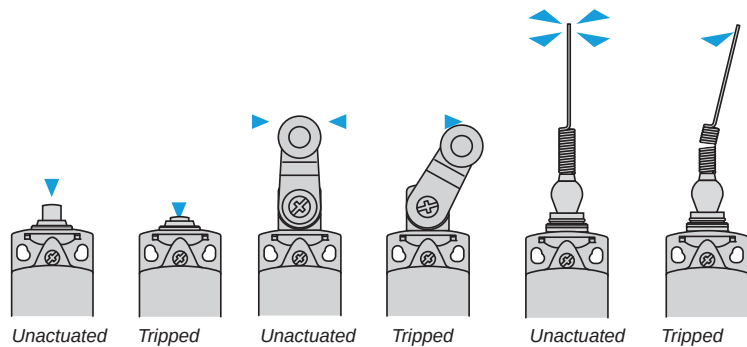
- galvanic separation of circuits,
- models suitable for low power switching, combined with good electrical durability,
- very good short-circuit withstand in coordination with appropriate fuses,
- total immunity to electromagnetic interference,
- high rated operational voltage.

■ From a mechanical viewpoint

- N/C 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 a.c., test 10 le/le.
- AC-12: control of a resistive load on a.c. or static load isolated by opto-coupler.
- DC-13 replaces DC-11: control of an electromagnet on d.c., test le/le.

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

- It is no longer a rated value but a conventional current used for heating tests.
- Example:** for category A300 the corresponding operational current, I_{th} maximum, is 6 A-120 V or 3 A-240 V, the equivalent I_{th} being 10 A.

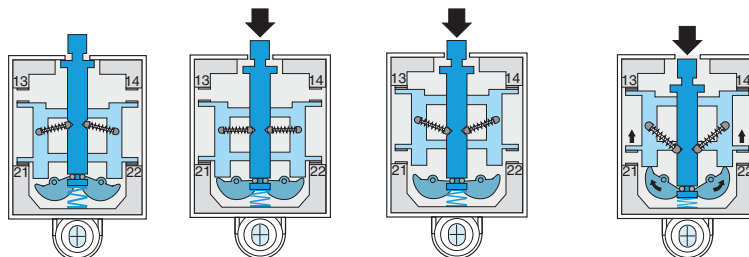
Positive opening operation

- 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 N/C + N/O (form Zb), N/C + N/O + N/O, N/C + N/C + N/O, N/C + N/C + N/O + N/O contact block are positive opening operation, in complete conformity with standard IEC 60947-5-1 Appendix K.

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

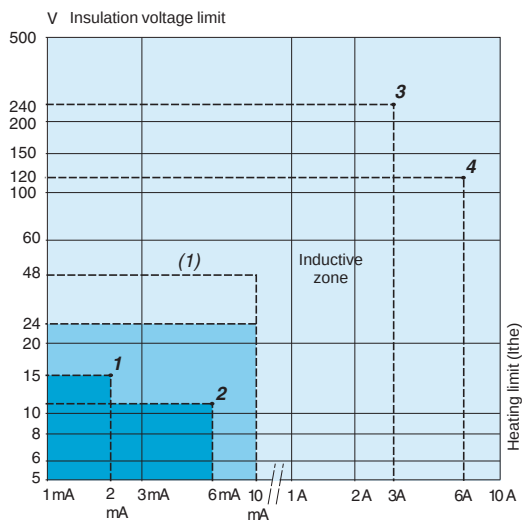
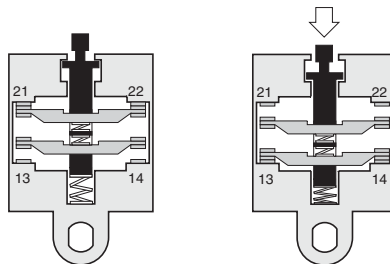
Contact change of state

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 1 m/s = 6 m/minute).

The opening distance is also dependent on the distance travelled by the operator.



Range of use		
Standard contacts	XE2S P2151, P3151	
Continuous service (frequent switching)	XE2N P●●●●	
	Contacts of XCM D	
	XE3● P●●●●	
Gold flashed contacts	Occasional service	(1)
on resistive load	Infrequent switching, ≤ 1 operating cycle/day and/or corrosive atmosphere	

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

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: XCK J161 + LC1 D12●●●● (7 VA sealed, 70 VA inrush).

Electrical durability = 10 million operating cycles.

Switching capacity

1 Normal industrial PLC input type 1

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

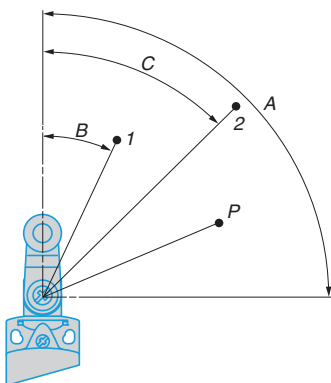
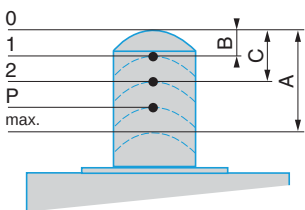
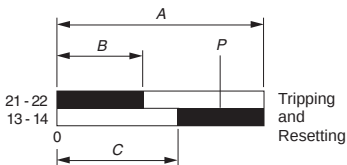
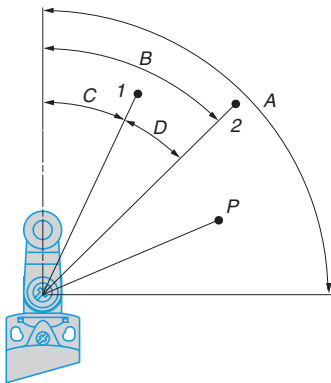
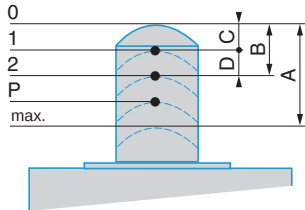
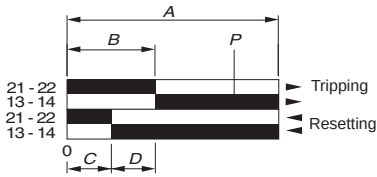
Electrical durability for small loads

- 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 XE2 S P).
- failure rate of less than 1 for 20 million operating cycles using slow break contacts (contacts XE●N P and XE3 S P).
- failure rate of less than 1 for 5 million operating cycles using contacts XCM D.

Contact blocks (continued)



Functional diagrams of snap action contacts

■ Example: N/C + N/O

- A - Maximum travel of the 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 the 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 the 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: N/C + N/O break before make

- A - Maximum travel of the 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.

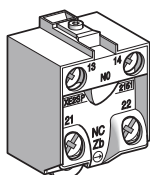
□ Linear movement (plunger)

- 1 - Tripping and resetting points of contact 21-22.
- 2 - Tripping and resetting points of contact 13-14.
- A - Maximum travel of the 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.

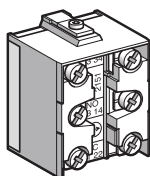
□ Rotary movement (lever)

- 1 - Tripping and resetting points of contact 21-22.
- 2 - Tripping and resetting points of contact 13-14.
- A - Maximum travel of the 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

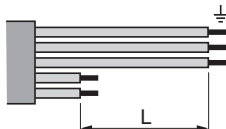


XE3 P screw clamp terminal connections

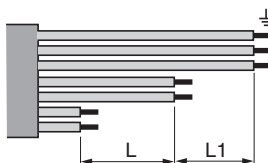
Mounting

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.

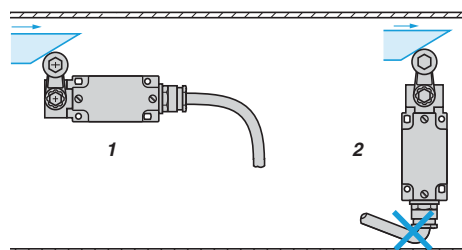


- for XE3 P, L = 14 mm, L1 = 11 mm.



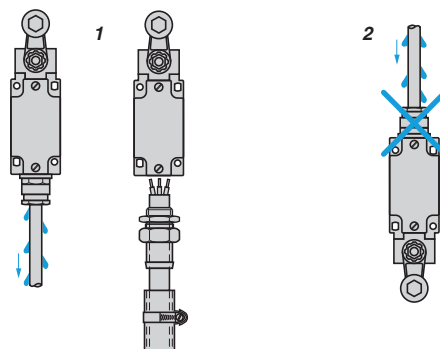
Sweep of connecting cable

- 1 Recommended
- 2 To be avoided



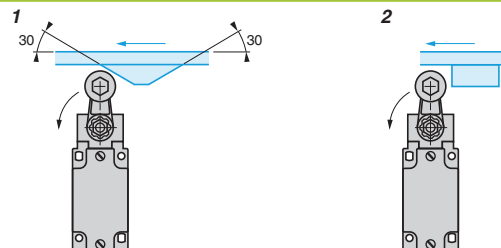
Position of cable gland

- 1 Recommended
- 2 To be avoided



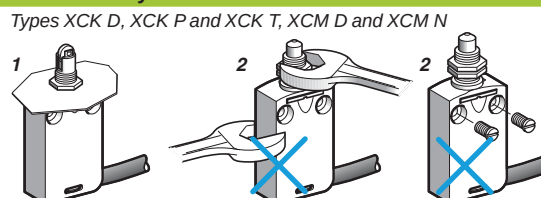
Type of cam

- 1 Recommended
- 2 To be avoided



Mounting and fixing limit switches by the head

- 1 Recommended
- 2 Forbidden



Setting-up

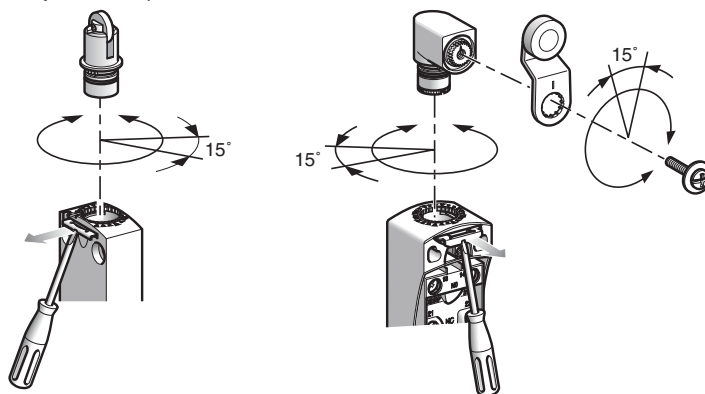
Tightening torque

- 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 XCK D, XCK P, XCK T	Cover	0.8	1.2
	Fixing screw for lever on rotary head	1	1.5
Miniature design XCM D, XCM N	–	–	–
	Fixing screw for lever on rotary head	1	1.5
Compact design XCK N	Cover	0.8	1.2
	Fixing screw for lever on rotary head	1	1.5
Classic design XCK J	Cover	1	1.5
	Fixing nut for lever on rotary head	1	1.5
Classic design XCK S	Cover	0.8	1.2
	Fixing nut for lever on rotary head	1	1.5
Classic design XCK M, XCK ML, XCK L	Cover	0.8	1.2
	Fixing nut for lever on rotary head	1	1.5

Types XCK D, XCK P, XCK T, XCM D

- Adjustable in 3 planes:



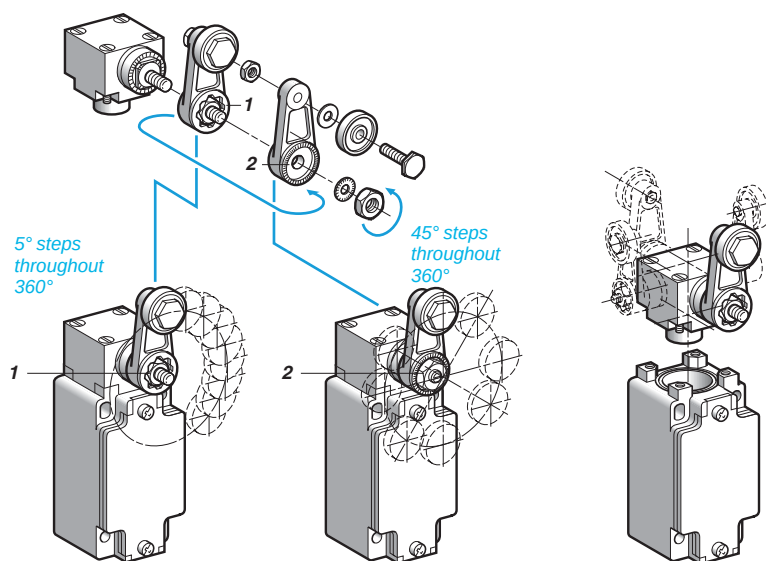
All the heads can be adjusted in 15° steps throughout 360°, in relation to the body.

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

Type XCK J

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

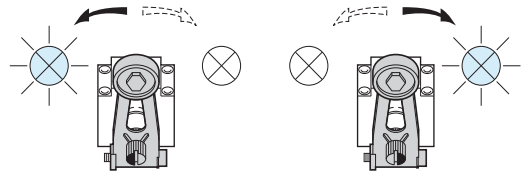
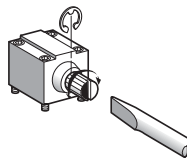
- 1 Reversed $\alpha = 5^\circ$
- 2 Forward $\alpha = 45^\circ$



Setting-up (continued)

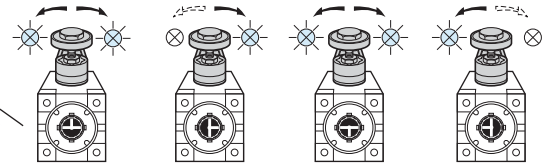
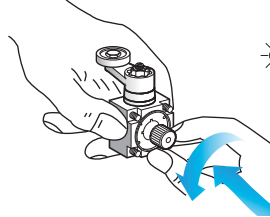
Direction of actuation programming

■ XC2 J



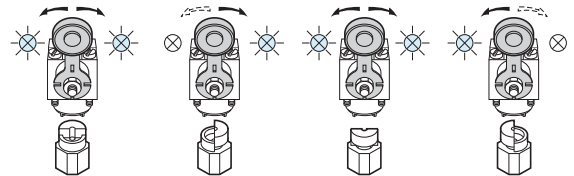
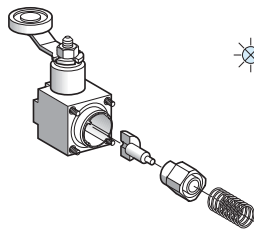
Head ZC2 JE05

■ XCK J



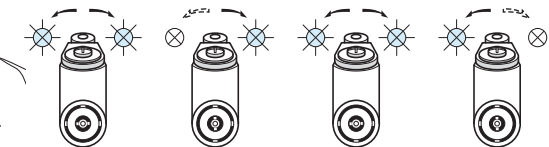
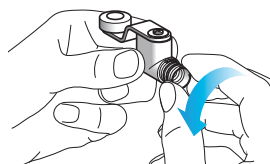
Head ZCK E05

■ XCK S



Head ZCK D05

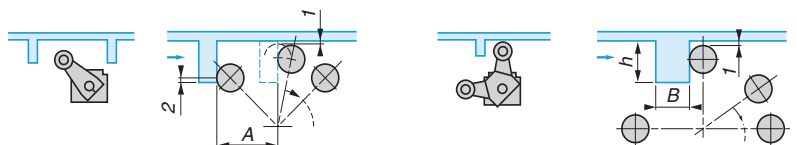
■ XCK D, XCK P, XCK T and XCM D



Head ZCE 05

Specific cams for heads ZCK E09 and ZC2 J09

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



A = length of lever + 11 mm

ZCK E09: $13 < h < 18$ mm and $B = 12$ mm max.

ZCK JE09: $14 < h < 24$ 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 controlgear).

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 EN 50013.

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 are the same polarity.



- Form Zb, the 2 contacts are electrically separate.

Symbol for positive opening



- Simplified version



- Complete symbol

CENELEC EN 50047

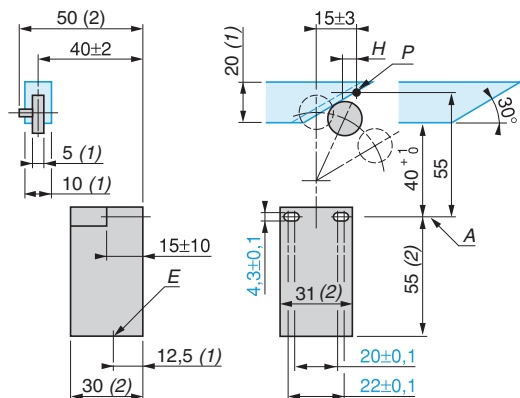
The European standards organisation CENELEC, which has 14 member countries, has defined in this standard the first type of limit switch.

It defines 4 variants of devices (forms A, B, C, E). Limit switches XCK P, XCK D and XCK T conform to standard EN 50047.

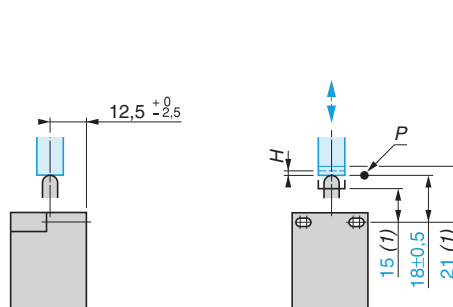
- (1) Minimum value
(2) Maximum value

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

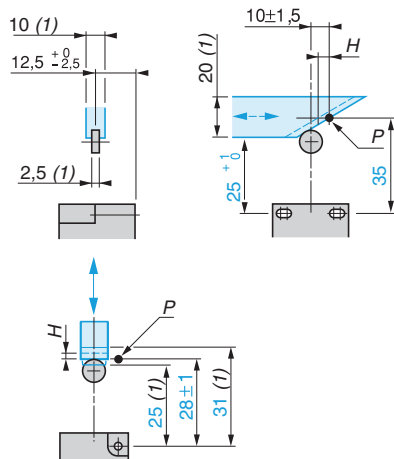
Form A, with roller lever



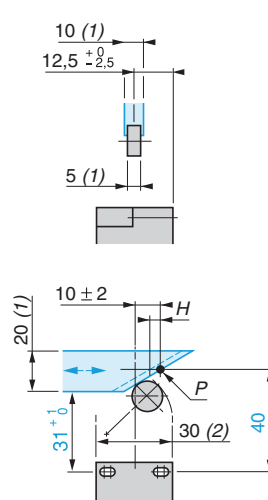
Form B, with end plunger (rounded)



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.

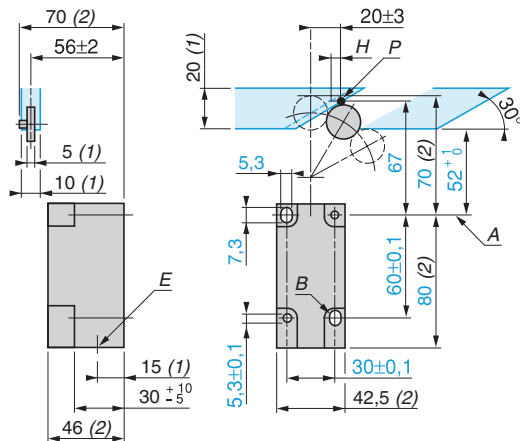
It defines 6 variants of devices (forms A, B, C, D, F, G).
Limit switches XCK J and XCK S conform to standard EN 50041.

(1) Minimum value
(2) Maximum value

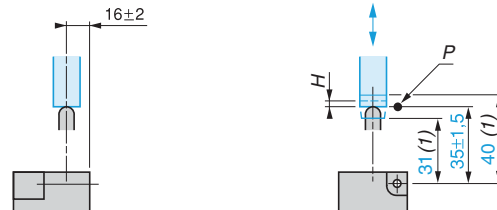
A: reference axis
B: optional elongated holes
H: differential travel
P: tripping point
E: cable entry

Za: tripping zone
Sa: tripping threshold

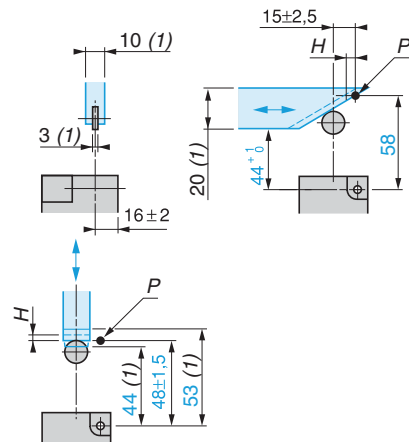
Form A, with roller lever



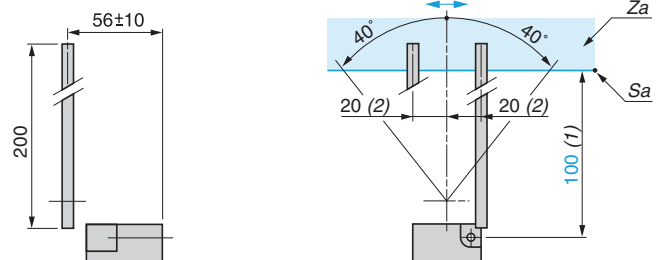
Form B, with end plunger (rounded)



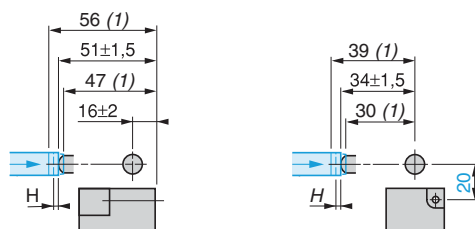
Form C, with end roller plunger



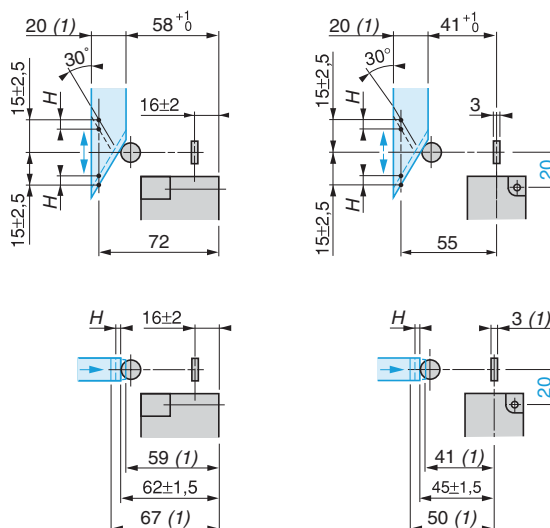
Form D, with rod lever



Form F, with side plunger (rounded)



Form G, with side roller plunger



Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Miniature design					
XCMA102	XCMD2102L1	XCMA1035E	ZCE02 + ZCMD21 + ZCMC21E5	XCMA115	XCMD2115L1
XCMA1020	ZCE02 + ZCMC21L10 + ZCMD21	XCMA1036	ZCE02 + ZCMC21L7 + ZCMD21	XCMA1150	ZCE01 + ZCY15 + ZCMC21L10 + ZCMD21
XCMA1022	ZCE02 + ZCMD21L2	XCMA1037	ZCE02 + ZCMC21L7 + ZCMD21	XCMA1152	ZCE01 + ZCY15 + ZCMD21L2
XCMA1022AE	ZCE02 + ZCMD61 + ZCMC21E2	XCMA1038	ZCE02 + ZCMC21L10 + ZCMD21	XCMA1153	ZCE01 + ZCY15 + ZCMC21L3 + ZCMD21
XCMA1022E	ZCE02 + ZCMD21 + ZCMC21E2	XCMA1039	ZCE02 + ZCMC21L10 + ZCMD21	XCMA1154	ZCE01 + ZCY15 + ZCMC21L3 + ZCMD21
XCMA1023	ZCE02 + ZCMC21L3 + ZCMD21	XCMA103AE	ZCE02 + ZCMD61 + ZCMC21E1	XCMA1155	ZCE01 + ZCY15 + ZCMD21L5
XCMA1023AE	ZCE02 + ZCMD61 + ZCMC21E3	XCMA103E	ZCE02 + ZCMD21 + ZCMC21E1	XCMA1156	ZCE01 + ZCY15 + ZCMC21L7 + ZCMD21
XCMA1023E	ZCE02 + ZCMD21 + ZCMC21E3	XCMA103L0120	ZCE02 + ZCMD21L08R12	XCMA115L0120	ZCE01 + ZCY15 + ZCMD21L08R12
XCMA1024	ZCE02 + ZCMD21L5	XCMA103M1020	ZCE02 + ZCMD21L08U78	XCMA115M1020	ZCE01 + ZCY15 + ZCMD21L08U78
XCMA1024AE	ZCE02 + ZCMD61 + ZCMC21E5	XCMA103T200	XCMD2102C12	XCMA115T200	XCMD2115C12
XCMA1024E	ZCE02 + ZCMD21 + ZCMC21E5	XCMA103T300	XCMD2102M12	XCMA115T300	XCMD2115M12
XCMA1025	ZCE02 + ZCMD21L5	XCMA110	XCMD2110L1	XCMA116	XCMD2116L1
XCMA1025AE	ZCE02 + ZCMD61 + ZCMC21E5	XCMA1100	ZCE10 + ZCMC21L10 + ZCMD21	XCMA1160	ZCE01 + ZCY16 + ZCMC21L10 + ZCMD21
XCMA1025E	ZCE02 + ZCMD21 + ZCMC21E5	XCMA1102	ZCE10 + ZCMD21L2	XCMA1162	ZCE01 + ZCY16 + ZCMD21L2
XCMA1026	ZCE02 + ZCMC21L7 + ZCMD21	XCMA1102AE	ZCE10 + ZCMD61 + ZCMC21E2	XCMA1162AE	ZCE01 + ZCY16 + ZCMD61 + ZCMC21E2
XCMA1027	ZCE02 + ZCMC21L7 + ZCMD21	XCMA1102E	ZCE10 + ZCMD21 + ZCMC21E2	XCMA1162E	ZCE01 + ZCY16 + ZCMD21 + ZCMC21E2
XCMA1028	ZCE02 + ZCMC21L10 + ZCMD21	XCMA1103	ZCE10 + ZCMC21L3 + ZCMD21	XCMA1163	ZCE01 + ZCY16 + ZCMC21L3 + ZCMD21
XCMA1029	ZCE02 + ZCMC21L10 + ZCMD21	XCMA1103AE	ZCE10 + ZCMD61 + ZCMC21E3	XCMA1163AE	ZCE01 + ZCY16 + ZCMD61 + ZCMC21E3
XCMA102AE	ZCE02 + ZCMD61 + ZCMC21E1	XCMA1103E	ZCE10 + ZCMD21 + ZCMC21E3	XCMA1163E	ZCE01 + ZCY16 + ZCMD21 + ZCMC21E3
XCMA102E	ZCE02 + ZCMD21 + ZCMC21E1	XCMA1104	ZCE10 + ZCMD21L5	XCMA1164	ZCE01 + ZCY16 + ZCMD21L5
XCMA102L0120	ZCE02 + ZCMD21L08R12	XCMA1104AE	ZCE10 + ZCMD61 + ZCMC21E5	XCMA1164AE	ZCE01 + ZCY16 + ZCMD61 + ZCMC21E5
XCMA102M1020	ZCE02 + ZCMD21L08U78	XCMA1104E	ZCE10 + ZCMD21 + ZCMC21E5	XCMA1164E	ZCE01 + ZCY16 + ZCMD21 + ZCMC21E5
XCMA102T200	XCMD2102C12	XCMA1105	ZCE10 + ZCMD21L5	XCMA1165	ZCE01 + ZCY16 + ZCMD21L5
XCMA102T300	XCMD2102M12	XCMA1105AE	ZCE10 + ZCMD61 + ZCMC21E5	XCMA1165AE	ZCE01 + ZCY16 + ZCMD61 + ZCMC21E5
XCMA103	XCMD2102L1	XCMA1105E	ZCE10 + ZCMD21 + ZCMC21E5	XCMA1165E	ZCE01 + ZCY16 + ZCMD21 + ZCMC21E5
XCMA1030	ZCE02 + ZCMC21L10 + ZCMD21	XCMA1106	ZCE10 + ZCMC21L7 + ZCMD21	XCMA1166	ZCE01 + ZCY16 + ZCMC21L7 + ZCMD21
XCMA1032	ZCE02 + ZCMD21L2	XCMA110AE	ZCE10 + ZCMD61 + ZCMC21E1	XCMA116AE	ZCE01 + ZCY16 + ZCMD61 + ZCMC21E1
XCMA1032AE	ZCE02 + ZCMD61 + ZCMC21E2	XCMA110E	ZCE10 + ZCMD21 + ZCMC21E1	XCMA116E	ZCE01 + ZCY16 + ZCMD21 + ZCMC21E1
XCMA1032E	ZCE02 + ZCMD21 + ZCMC21E2	XCMA110L0120	ZCE10 + ZCMD21L08R12	XCMA116L0120	ZCE01 + ZCY16 + ZCMD21L08R12
XCMA1033	ZCE02 + ZCMC21L3 + ZCMD21	XCMA110M1020	ZCE10 + ZCMD21L08U78	XCMA116M1020	ZCE01 + ZCY16 + ZCMD21L08U78
XCMA1033AE	ZCE02 + ZCMD61 + ZCMC21E3	XCMA110T200	XCMD2110C12	XCMA116T200	XCMD2116C12
XCMA1033E	ZCE02 + ZCMD21 + ZCMC21E3	XCMA110T300	XCMD2110M12	XCMA116T300	XCMD2116M12
XCMA1034	ZCE02 + ZCMD21L5	XCMA111	XCMD2111L1	XCMA117	XCMD2117L1
XCMA1034AE	ZCE02 + ZCMD61 + ZCMC21E5	XCMA1110	ZCE11 + ZCMC21L10 + ZCMD21	XCMA1170	ZCE01 + ZCY17 + ZCMC21L10 + ZCMD21
XCMA1034E	ZCE02 + ZCMD21 + ZCMC21E5	XCMA1112	ZCE11 + ZCMD21L2	XCMA1172	ZCE01 + ZCY17 + ZCMD21L2
XCMA1035	ZCE02 + ZCMD21L5	XCMA1113	ZCE11 + ZCMC21L3 + ZCMD21	XCMA1173	ZCE01 + ZCY17 + ZCMC21L3 + ZCMD21
XCMA1035AE	ZCE02 + ZCMD61 + ZCMC21E5	XCMA1114	ZCE11 + ZCMD21L5	XCMA1174	ZCE01 + ZCY17 + ZCMD21L5
		XCMA1115	ZCE11 + ZCMD21L5	XCMA1175	ZCE01 + ZCY17 + ZCMD21L5
		XCMA1116	ZCE11 + ZCMC21L7 + ZCMD21		

Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Miniature design (continued)		XCMA1270	ZCE01 + ZCY23 + ZCMC21L10 + ZCMD21	XCMB5153	ZCE01 + ZCY15 + ZCMC25L3 + ZCMD25
XCMA1176	ZCE01 + ZCY17 + ZCMC21L7 + ZCMD21	XCMA1272	ZCE01 + ZCY23 + ZCMC21L2 + ZCMD21	XCMB5154	ZCE01 + ZCY15 + ZCMD25L5
XCMA117L0120	ZCE01 + ZCY17 + ZCMD21L08R12	XCMA1273	ZCE01 + ZCY23 + ZCMC21L3 + ZCMD21	XCMB5155	ZCE01 + ZCY15 + ZCMD25L5
XCMA117M1020	ZCE01 + ZCY17 + ZCMD21L08U78	XCMA1274	ZCE01 + ZCY23 + ZCMC21L5 + ZCMD21	XCMB5156	ZCE01 + ZCY15 + ZCMC25L7 + ZCMD25
XCMA117T200	XCMD2117C12	XCMA1275	ZCE01 + ZCY23 + ZCMC21L5 + ZCMD21	XCMB516	XCMD2516L1
XCMA117T300	XCMD2117M12	XCMA1276	ZCE01 + ZCY23 + ZCMC21L7 + ZCMD21	XCMB5160	ZCE01 + ZCY16 + ZCMC25L10 + ZCMD25
XCMA125	ZCE01 + ZCY25 + ZCMC21L1 + ZCMD21	XCMA1277	ZCE01 + ZCY23 + ZCMC21L7 + ZCMD21	XCMB5162	ZCE01 + ZCY16 + ZCMD25L2
XCMA1250	ZCE01 + ZCY25 + ZCMC21L10 + ZCMD21	XCMA1278	ZCE01 + ZCY23 + ZCMC21L10 + ZCMD21	XCMB5163	ZCE01 + ZCY16 + ZCMC25L3 + ZCMD25
XCMA1252	ZCE01 + ZCY25 + ZCMC21L2 + ZCMD21	XCMA1279	ZCE01 + ZCY23 + ZCMC21L10 + ZCMD21	XCMB5164	ZCE01 + ZCY16 + ZCMD25L5
XCMA1252AE	ZCE01 + ZCY25 + ZCMC21E2 + ZCMD61	XCMB502	XCMD2502L1	XCMB5165	ZCE01 + ZCY16 + ZCMD25L5
XCMA1252E	ZCE01 + ZCY25 + ZCMC21E2 + ZCMD21	XCMB5020	ZCE02 + ZCMC25L10 + ZCMD25	XCMB5166	ZCE01 + ZCY16 + ZCMC25L7 + ZCMD25
XCMA1253	ZCE01 + ZCY25 + ZCMC21L3 + ZCMD21	XCMB5022	ZCE02 + ZCMD25L2	XCMB517	XCMD2517L1
XCMA1253AE	ZCE01 + ZCY25 + ZCMC21E3 + ZCMD61	XCMB5023	ZCE02 + ZCMC25L3 + ZCMD25	XCMB5170	ZCE01 + ZCY17 + ZCMC25L10 + ZCMD25
XCMA1253E	ZCE01 + ZCY25 + ZCMC21E3 + ZCMD21	XCMB5024	ZCE02 + ZCMD25L5	XCMB5172	ZCE01 + ZCY17 + ZCMD25L2
XCMA1254	ZCE01 + ZCY25 + ZCMC21L5 + ZCMD21	XCMB5025	ZCE02 + ZCMD25L5	XCMB5173	ZCE01 + ZCY17 + ZCMC25L3 + ZCMD25
XCMA1254AE	ZCE01 + ZCY25 + ZCMC21E5 + ZCMD61	XCMB5026	ZCE02 + ZCMC25L7 + ZCMD25	XCMB5174	ZCE01 + ZCY17 + ZCMD25L5
XCMA1254E	ZCE01 + ZCY25 + ZCMC21E5 + ZCMD21	XCMB503	XCMD2502L1	XCMB5175	ZCE01 + ZCY17 + ZCMD25L5
XCMA1255	ZCE01 + ZCY25 + ZCMC21L5 + ZCMD21	XCMB5030	ZCE02 + ZCMC25L10 + ZCMD25	XCMB5176	ZCE01 + ZCY17 + ZCMC25L7 + ZCMD25
XCMA1255AE	ZCE01 + ZCY25 + ZCMC21E5 + ZCMD61	XCMB5032	ZCE02 + ZCMD25L2	XCMB525	ZCE01 + ZCY25 + ZCMC25L1 + ZCMD25
XCMA1255E	ZCE01 + ZCY25 + ZCMC21E5 + ZCMD21	XCMB5033	ZCE02 + ZCMC25L3 + ZCMD25	XCMB5250	ZCE01 + ZCY25 + ZCMC25L10 + ZCMD25
XCMA1256	ZCE01 + ZCY25 + ZCMC21L7 + ZCMD21	XCMB5034	ZCE02 + ZCMD25L5	XCMB5252	ZCE01 + ZCY25 + ZCMC25L2 + ZCMD25
XCMA125AE	ZCE01 + ZCY25 + ZCMC61E1 + ZCMD21	XCMB5035	ZCE02 + ZCMD25L5	XCMB5253	ZCE01 + ZCY25 + ZCMC25L3 + ZCMD25
XCMA125E	ZCE01 + ZCY25 + ZCMC21E1 + ZCMD21	XCMB5036	ZCE02 + ZCMC25L7 + ZCMD25	XCMB5254	ZCE01 + ZCY25 + ZCMC25L5 + ZCMD25
XCMA126	ZCE01 + ZCY26 + ZCMC21L1 + ZCMD21	XCMB510	XCMD2510L1	XCMB5255	ZCE01 + ZCY25 + ZCMC25L5 + ZCMD25
XCMA1260	ZCE01 + ZCY26 + ZCMC21L10 + ZCMD21	XCMB5100	ZCE10 + ZCMC25L10 + ZCMD25	XCMB5256	ZCE01 + ZCY25 + ZCMC25L7 + ZCMD25
XCMA1262	ZCE01 + ZCY26 + ZCMC21L2 + ZCMD21	XCMB5102	ZCE10 + ZCMD25L2	XCMB526	ZCE01 + ZCY26 + ZCMC25L1 + ZCMD25
XCMA1263	ZCE01 + ZCY26 + ZCMC21L3 + ZCMD21	XCMB5103	ZCE10 + ZCMC25L3 + ZCMD25	XCMB5260	ZCE01 + ZCY26 + ZCMC25L10 + ZCMD25
XCMA1264	ZCE01 + ZCY26 + ZCMC21L5 + ZCMD21	XCMB5104	ZCE10 + ZCMD25L5	XCMB5262	ZCE01 + ZCY26 + ZCMC25L2 + ZCMD25
XCMA1265	ZCE01 + ZCY26 + ZCMC21L5 + ZCMD21	XCMB5105	ZCE10 + ZCMD25L5	XCMB5263	ZCE01 + ZCY26 + ZCMC25L3 + ZCMD25
XCMA1266	ZCE01 + ZCY26 + ZCMC21L7 + ZCMD21	XCMB5106	ZCE10 + ZCMC25L7 + ZCMD25	XCMB5264	ZCE01 + ZCY26 + ZCMC25L5 + ZCMD25
XCMA1267	ZCE01 + ZCY26 + ZCMC21L7 + ZCMD21	XCMB511	XCMD2511L1	XCMB5265	ZCE01 + ZCY26 + ZCMC25L5 + ZCMD25
XCMA1268	ZCE01 + ZCY26 + ZCMC21L10 + ZCMD21	XCMB5110	ZCE11 + ZCMC25L10 + ZCMD25	XCMB5266	ZCE01 + ZCY26 + ZCMC25L7 + ZCMD25
XCMA1269	ZCE01 + ZCY26 + ZCMC21L10 + ZCMD21	XCMB5112	ZCE11 + ZCMD25L2	XCMB5267	ZCE01 + ZCY26 + ZCMC25L7 + ZCMD25
XCMA127	ZCE01 + ZCY23 + ZCMC21L1 + ZCMD21	XCMB5113	ZCE11 + ZCMC25L3 + ZCMD25	XCMB5268	ZCE01 + ZCY26 + ZCMC25L10 + ZCMD25
		XCMB5114	ZCE11 + ZCMD25L5	XCMB5269	ZCE01 + ZCY26 + ZCMC25L10 + ZCMD25
		XCMB5115	ZCE11 + ZCMD25L5	XCMB527	ZCE01 + ZCY23 + ZCMC25L1 + ZCMD25
		XCMB5116	ZCE11 + ZCMC25L7 + ZCMD25	XCMB5270	ZCE01 + ZCY23 + ZCMC25L10 + ZCMD25
		XCMB515	XCMD2515L1		
		XCMB5150	ZCE01 + ZCY15 + ZCMC25L10 + ZCMD25		
		XCMB5152	ZCE01 + ZCY15 + ZCMD25L2		

Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Miniature design (continued)					
XCMB5272	ZCE01 + ZCY23 + ZCMC25L2 + ZCMD25	XCMF1033E	ZCEF2 + ZCMD21 + ZCMC21E3	XCMF1114	ZCEG1 + ZCMD21L5
XCMB5273	ZCE01 + ZCY23 + ZCMC25L3 + ZCMD25	XCMF1034	ZCEF2 + ZCMD21L5	XCMF1115	ZCEG1 + ZCMD21L5
XCMB5274	ZCE01 + ZCY23 + ZCMC25L5 + ZCMD25	XCMF1034AE	ZCEF2 + ZCMD61 + ZCMC21E5	XCMF1116	ZCEG1 + ZCMC21L7 + ZCMD21
XCMB5275	ZCE01 + ZCY23 + ZCMC25L5 + ZCMD25	XCMF1034E	ZCEF2 + ZCMD21 + ZCMC21E5	XCMF1117	ZCEG1 + ZCMC21L7 + ZCMD21
XCMB5276	ZCE01 + ZCY23 + ZCMC25L7 + ZCMD25	XCMF1035	ZCEF2 + ZCMD21L5	XCMF1118	ZCEG1 + ZCMC21L10 + ZCMD21
XCMB5277	ZCE01 + ZCY23 + ZCMC25L7 + ZCMD25	XCMF1035AE	ZCEF2 + ZCMD61 + ZCMC21E5	XCMF1119	ZCEG1 + ZCMC21L10 + ZCMD21
XCMB5278	ZCE01 + ZCY23 + ZCMC25L10 + ZCMD25	XCMF1035E	ZCEF2 + ZCMD21 + ZCMC21E5	XCMG502	XCMD25F2L1
XCMB5279	ZCE01 + ZCY23 + ZCMC25L10 + ZCMD25	XCMF1036	ZCEF2 + ZCMC21L7 + ZCMD21	XCMG5020	ZCEF2 + ZCMC25L10 + ZCMD25
XCMF102	XCMD21F2L1	XCMF1037	ZCEF2 + ZCMC21L7 + ZCMD21	XCMG5022	ZCEF2 + ZCMD25L2
XCMF1020	ZCEF2 + ZCMC21L10 + ZCMD21	XCMF1038	ZCEF2 + ZCMC21L10 + ZCMD21	XCMG5023	ZCEF2 + ZCMC25L3 + ZCMD25
XCMF1022	ZCEF2 + ZCMD21L2	XCMF1039	ZCEF2 + ZCMC21L10 + ZCMD21	XCMG5024	ZCEF2 + ZCMD25L5
XCMF1022AE	ZCEF2 + ZCMD61 + ZCMC21E2	XCMF103AE	ZCEF2 + ZCMD61 + ZCMC21E1	XCMG5025	ZCEF2 + ZCMD25L5
XCMF1022E	ZCEF2 + ZCMD21 + ZCMC21E2	XCMF103E	ZCEF2 + ZCMD21 + ZCMC21E1	XCMG5026	ZCEF2 + ZCMC25L7 + ZCMD25
XCMF1023	ZCEF2 + ZCMC21L3 + ZCMD21	XCMF110	XCMD21F0L1	XCMG5027	ZCEF2 + ZCMC25L7 + ZCMD25
XCMF1023AE	ZCEF2 + ZCMD61 + ZCMC21E3	XCMF1100	ZCEF0 + ZCMC21L10 + ZCMD21	XCMG5028	ZCEF2 + ZCMC25L10 + ZCMD25
XCMF1023E	ZCEF2 + ZCMD21 + ZCMC21E3	XCMF1102	ZCEF0 + ZCMD21L2	XCMG5029	ZCEF2 + ZCMC25L10 + ZCMD25
XCMF1024	ZCEF2 + ZCMD21L5	XCMF1102AE	ZCEF0 + ZCMD61 + ZCMC21E2	XCMG503	XCMD25F2L1
XCMF1024AE	ZCEF2 + ZCMD61 + ZCMC21E5	XCMF1102E	ZCEF0 + ZCMD21 + ZCMC21E2	XCMG5030	ZCEF2 + ZCMC25L10 + ZCMD25
XCMF1024E	ZCEF2 + ZCMD21 + ZCMC21E5	XCMF1103	ZCEF0 + ZCMD21 + ZCMC21E2	XCMG5032	ZCEF2 + ZCMD25L2
XCMF1025	ZCEF2 + ZCMD21L5	XCMF1103AE	ZCEF0 + ZCMC21L3 + ZCMD21	XCMG5033	ZCEF2 + ZCMC25L3 + ZCMD25
XCMF1025AE	ZCEF2 + ZCMD61 + ZCMC21E5	XCMF1103E	ZCEF0 + ZCMD61 + ZCMC21E3	XCMG5034	ZCEF2 + ZCMD25L5
XCMF1025E	ZCEF2 + ZCMD21 + ZCMC21E5	XCMF1104	ZCEF0 + ZCMD21L5	XCMG5035	ZCEF2 + ZCMD25L5
XCMF1026	ZCEF2 + ZCMC21L7 + ZCMD21	XCMF1104E	ZCEF0 + ZCMD21 + ZCMC21E5	XCMG5036	ZCEF2 + ZCMC25L7 + ZCMD25
XCMF1027	ZCEF2 + ZCMC21L7 + ZCMD21	XCMF1105	ZCEF0 + ZCMD21L5	XCMG5037	ZCEF2 + ZCMC25L7 + ZCMD25
XCMF1028	ZCEF2 + ZCMC21L10 + ZCMD21	XCMF1105AE	ZCEF0 + ZCMD61 + ZCMC21E5	XCMG5038	ZCEF2 + ZCMC25L10 + ZCMD25
XCMF1029	ZCEF2 + ZCMC21L10 + ZCMD21	XCMF1105E	ZCEF0 + ZCMD21 + ZCMC21E5	XCMG5039	ZCEF2 + ZCMC25L10 + ZCMD25
XCMF102AE	ZCEF2 + ZCMD61 + ZCMC21E1	XCMF1106	ZCEF0 + ZCMC21L7 + ZCMD21	XCMG510	XCMD25F0L1
XCMF102E	ZCEF2 + ZCMD21 + ZCMC21E1	XCMF1107	ZCEF0 + ZCMC21L7 + ZCMD21	XCMG5100	ZCEF0 + ZCMC25L10 + ZCMD25
XCMF103	XCMD21F2L1	XCMF1108	ZCEF0 + ZCMC21L7 + ZCMD21	XCMG5102	ZCEF0 + ZCMD25L2
XCMF1030	ZCEF2 + ZCMC21L10 + ZCMD21	XCMF1109	ZCEF0 + ZCMC21L10 + ZCMD21	XCMG5103	ZCEF0 + ZCMC25L3 + ZCMD25
XCMF1032	ZCEF2 + ZCMD21L2	XCMF1109AE	ZCEF0 + ZCMD61 + ZCMC21E1	XCMG5104	ZCEF0 + ZCMD25L5
XCMF1032AE	ZCEF2 + ZCMD61 + ZCMC21E2	XCMF110E	ZCEF0 + ZCMD21 + ZCMC21E1	XCMG5105	ZCEF0 + ZCMD25L5
XCMF1032E	ZCEF2 + ZCMD21 + ZCMC21E2	XCMF111	XCMD21G1L1	XCMG5106	ZCEF0 + ZCMC25L7 + ZCMD25
XCMF1033	ZCEF2 + ZCMC21L3 + ZCMD21	XCMF1110	ZCEG1 + ZCMC21L10 + ZCMD21	XCMG5107	ZCEF0 + ZCMC25L7 + ZCMD25
XCMF1033AE	ZCEF2 + ZCMD61 + ZCMC21E3	XCMF1112	ZCEG1 + ZCMD21L2	XCMG5108	ZCEF0 + ZCMC25L10 + ZCMD25
		XCMF1113	ZCEG1 + ZCMC21L3 + ZCMD21	XCMG5109	ZCEF0 + ZCMC25L10 + ZCMD25
				XCMG511	XCMD25G1L1
				XCMG5110	ZCEG1 + ZCMC25L10 + ZCMD25
				XCMG5112	ZCEG1 + ZCMD25L2

Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Miniature design (continued)		Design compact			
XCMG5113	ZCEG1 + ZCMC25L3 + ZCMD25	Compact design plastic type XCKP		XCKP111H29 (1)	XCKP2111P16
XCMG5114	ZCEG1 + ZCMD25L5	ZCKY45 + XCKP601	ZCP26 + ZCE01 + ZCY45 + ZCPEG11	XCKP111H44 (1)	ZCP21 + ZCE11 + ZCPEG13
XCMG5115	ZCEG1 + ZCMD25L5	ZCKY45 + XCKP601H29	ZCP26 + ZCE01 + ZCY45 + ZCPEP16	XCKP111H7 (1)	ZCP21 + ZCE11 + ZCPEN12
XCMG5116	ZCEG1 + ZCMC25L7 + ZCMD25	ZCKY54 + XCKP601	ZCP26 + ZCE01 + ZCY54 + ZCPEG11	XCKP118	XCKP2118G11
XCMG5117	ZCEG1 + ZCMC25L7 + ZCMD25	ZCKY54 + XCKP601H29	ZCP26 + ZCE01 + ZCY54 + ZCPEP16	XCKP118H29	XCKP2118P16
XCMG5118	ZCEG1 + ZCMC25L10 + ZCMD25	ZCKY55 + XCKP601	ZCP26 + ZCE01 + ZCY55 + ZCPEG11	XCKP118H44	ZCP21 + ZCE01 + ZCY18 + ZCPEG13
XCMG5119	ZCEG1 + ZCMC25L10 + ZCMD25	ZCKY55 + XCKP601H29	ZCP26 + ZCE01 + ZCY55 + ZCPEP16	XCKP118H7	ZCP21 + ZCE01 + ZCY18 + ZCPEN12
		ZCKY18 + XCKP701	ZCP27 + ZCE01 + ZCY18 + ZCPEG11	XCKP119	ZCP21 + ZCE01 + ZCY19 + ZCPEG11
		ZCKY18 + XCKP701H29	ZCP27 + ZCE01 + ZCY18 + ZCPEP16	XCKP1198	ZCP61 + ZCE01 + ZCY19 + ZCPEG11
		ZCKY45 + XCKP701	ZCP27 + ZCE01 + ZCY45 + ZCPEG11	XCKP119H29	ZCP21 + ZCE01 + ZCY19 + ZCPEP16
		ZCKY45 + XCKP701H29	ZCP27 + ZCE01 + ZCY45 + ZCPEP16	XCKP119H7	ZCP21 + ZCE01 + ZCY19 + ZCPEN12
		ZCKY54 + XCKP701	ZCP27 + ZCE01 + ZCY54 + ZCPEG11	XCKP121	XCKP2121G11
		ZCKY54 + XCKP701H29	ZCP27 + ZCE01 + ZCY54 + ZCPEP16	XCKP1218	ZCP61 + ZCE21 + ZCPEG11
		ZCKY55 + XCKP701	ZCP27 + ZCE01 + ZCY55 + ZCPEG11	XCKP121H29	XCKP2121P16
		ZCKY55 + XCKP701H29	ZCP27 + ZCE01 + ZCY55 + ZCPEP16	XCKP121H44	ZCP21 + ZCE21 + ZCPEG13
		ZCKY18 + XCKP801	ZCP28 + ZCE01 + ZCY18 + ZCPEG11	XCKP121H7	ZCP21 + ZCE21 + ZCPEN12
		ZCKY18 + XCKP801H29	ZCP28 + ZCE01 + ZCY18 + ZCPEP16	XCKP127	XCKP2127G11
		ZCKY45 + XCKP801	ZCP28 + ZCE01 + ZCY45 + ZCPEG11	XCKP1278	ZCP61 + ZCE27 + ZCPEG11
		ZCKY45 + XCKP801H29	ZCP28 + ZCE01 + ZCY45 + ZCPEP16	XCKP127H29	XCKP2127P16
		ZCKY54 + XCKP801	ZCP28 + ZCE01 + ZCY54 + ZCPEG11	XCKP127H44	ZCP21 + ZCE27 + ZCPEG13
		ZCKY54 + XCKP801H29	ZCP28 + ZCE01 + ZCY54 + ZCPEP16	XCKP127H7	ZCP21 + ZCE27 + ZCPEN12
		ZCKY55 + XCKP801	ZCP28 + ZCE01 + ZCY55 + ZCPEG11	XCKP128	XCKP2128G11
		ZCKY55 + XCKP801H29	ZCP28 + ZCE01 + ZCY55 + ZCPEP16	XCKP1288	ZCP61 + ZCE28 + ZCPEG11
		XCKP101H29	XCKP2101P16	XCKP128H29	XCKP2128P16
		XCKP101H44	ZCP21 + ZCE01 + ZCPEG13	XCKP128H44	ZCP21 + ZCE28 + ZCPEG13
		XCKP102	XCKP2102G11	XCKP128H7	ZCP21 + ZCE28 + ZCPEN12
		XCKP102H29	XCKP2102P16	XCKP145	XCKP2145G11
		XCKP102H44	ZCP21 + ZCE02 + ZCPEG13	XCKP1458	ZCP61 + ZCE01 + ZCY45 + ZCPEG11
		XCKP102H7	ZCP21 + ZCE02 + ZCPEN12	XCKP145H29	XCKP2145P16
		XCKP106	XCKP2106G11	XCKP145H44	ZCP21 + ZCE01 + ZCY45 + ZCPEG13
		XCKP106H29	XCKP2106P16	XCKP145H7	ZCP21 + ZCE01 + ZCY45 + ZCPEN12
		XCKP106H44	ZCP21 + ZCE06 + ZCPEG13	XCKP146	ZCP21 + ZCE01 + ZCY46 + ZCPEG11
		XCKP106H7	ZCP21 + ZCE06 + ZCPEN12	XCKP1468	ZCP61 + ZCE01 + ZCY46 + ZCPEG11
		XCKP110	XCKP2110G11	XCKP146H29	ZCP21 + ZCE01 + ZCY46 + ZCPEP16
		XCKP1108	ZCP61 + ZCE10 + ZCPEG11	XCKP146H7	ZCP21 + ZCE01 + ZCY46 + ZCPEN12
		XCKP110H29	XCKP2110P16	XCKP154	ZCP21 + ZCE01 + ZCY54 + ZCPEG11
		XCKP110H44	ZCP21 + ZCE10 + ZCPEG13	XCKP1548	ZCP61 + ZCE01 + ZCY54 + ZCPEG11
		XCKP110H7	ZCP21 + ZCE10 + ZCPEN12	XCKP154H29	ZCP21 + ZCE01 + ZCY54 + ZCPEP16
		XCKP111 (1)	XCKP2111G11	XCKP154H44	ZCP21 + ZCE01 + ZCY54 + ZCPEG13
				XCKP154H7	ZCP21 + ZCE01 + ZCY54 + ZCPEN12
				XCKP155	ZCP21 + ZCE01 + ZCY55 + ZCPEG11

(1) Functional substitution, mounting offset by 10 mm.

Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Design compact (continued)					
Compact design plastic type XCKP (continued)					
XCKP1558	ZCP61 + ZCE01 + ZCY55 + ZCEG11	XCKP5279	XCPR2527G13	XCKP621H29	ZCP26 + ZCE21 + ZCPEP16
XCKP155H29	ZCP21 + ZCE01 + ZCY55 + ZCPEP16	XCKP5279H29	XCPR2527P20	XCKP621H44	ZCP26 + ZCE21 + ZCEG13
XCKP155H44	ZCP21 + ZCE01 + ZCY55 + ZCEG13	XCKP5279H7	XCPR2527N12	XCKP627	ZCP26 + ZCE27 + ZCPEG11
XCKP155H7	ZCP21 + ZCE01 + ZCY55 + ZCPEN12	XCKP527H29	XCKP2527P16	XCKP627H29	ZCP26 + ZCE27 + ZCPEP16
XCKP501	XCKP2501G11	XCKP527H44	ZCP25 + ZCE27 + ZCEG13	XCKP627H44	ZCP26 + ZCE27 + ZCEG13
XCKP501H29	XCKP2501P16	XCKP527H7	ZCP25 + ZCE27 + ZCPEN12	XCKP628	ZCP26 + ZCE28 + ZCPEG11
XCKP502	XCKP2502G11	XCKP528	XCKP2528G11	XCKP628H29	ZCP26 + ZCE28 + ZCPEP16
XCKP5029	XCPR2502G13	XCKP528H29	XCKP2528P16	XCKP628H44	ZCP26 + ZCE28 + ZCEG13
XCKP5029H29	XCPR2502P20	XCKP528H44	ZCP25 + ZCE28 + ZCEG13	XCKP639	ZCP26 + ZCE01 + ZCY39 + ZCEG11
XCKP5029H7	XCPR2502N12	XCKP528H7	ZCP25 + ZCE28 + ZCPEN12	XCKP645	ZCP26 + ZCE01 + ZCY45 + ZCEG11
XCKP502H29	XCKP2502P16	XCKP539	XCKP2539G11	XCKP645H29	ZCP26 + ZCE01 + ZCY45 + ZCPEP16
XCKP502H44	ZCP25 + ZCE02 + ZCEG13	XCKP545	XCKP2545G11	XCKP645H44	ZCP26 + ZCE01 + ZCY45 + ZCEG13
XCKP502H7	ZCP25 + ZCE02 + ZCPEN12	XCKP545H29	XCKP2545P16	XCKP646	ZCP26 + ZCE01 + ZCY46 + ZCEG11
XCKP506	XCKP2506G11	XCKP545H44	ZCP25 + ZCE01 + ZCY45 + ZCEG13	XCKP646H29	ZCP26 + ZCE01 + ZCY46 + ZCPEP16
XCKP506H29	XCKP2506P16	XCKP545H7	ZCP25 + ZCE01 + ZCY45 + ZCPEN12	XCKP654	ZCP26 + ZCE01 + ZCY54 + ZCEG11
XCKP506H44	ZCP25 + ZCE06 + ZCEG13	XCKP546	ZCP25 + ZCE01 + ZCY46 + ZCEG11	XCKP654H29	ZCP26 + ZCE01 + ZCY54 + ZCPEP16
XCKP506H7	ZCP25 + ZCE06 + ZCPEN12	XCKP546H29	ZCP25 + ZCE01 + ZCY46 + ZCPEP16	XCKP654H44	ZCP26 + ZCE01 + ZCY54 + ZCEG13
XCKP510	XCKP2510G11	XCKP546H7	ZCP25 + ZCE01 + ZCY46 + ZCPEN12	XCKP655	ZCP26 + ZCE01 + ZCY55 + ZCEG11
XCKP5109	XCPR2510G13	XCKP554	ZCP25 + ZCE01 + ZCY54 + ZCEG11	XCKP655H29	ZCP26 + ZCE01 + ZCY55 + ZCPEP16
XCKP5109H29	XCPR2510P20	XCKP554H29	ZCP25 + ZCE01 + ZCY54 + ZCPEP16	XCKP655H44	ZCP26 + ZCE01 + ZCY55 + ZCEG13
XCKP5109H7	XCPR2510N12	XCKP554H44	ZCP25 + ZCE01 + ZCY54 + ZCEG13	XCKP701	ZCP27 + ZCE01 + ZCEG11
XCKP510H29	XCKP2510P16	XCKP554H7	ZCP25 + ZCE01 + ZCY54 + ZCPEN12	XCKP701H29	ZCP27 + ZCE01 + ZCPEP16
XCKP510H44	ZCP25 + ZCE10 + ZCEG13	XCKP555	ZCP25 + ZCE01 + ZCY55 + ZCEG11	XCKP702	ZCP27 + ZCE02 + ZCEG11
XCKP510H7	ZCP25 + ZCE10 + ZCPEN12	XCKP555H29	ZCP25 + ZCE01 + ZCY55 + ZCPEP16	XCKP702H29	ZCP27 + ZCE02 + ZCPEP16
XCKP511 (1)	XCKP2511G11	XCKP555H44	ZCP25 + ZCE01 + ZCY55 + ZCEG13	XCKP702H44	ZCP27 + ZCE02 + ZCEG13
XCKP511H29 (1)	XCKP2511P16	XCKP555H7	ZCP25 + ZCE01 + ZCY55 + ZCPEN12	XCKP706	ZCP27 + ZCE06 + ZCEG11
XCKP511H44 (1)	ZCP25 + ZCE11 + ZCEG13	XCKP601	ZCP26 + ZCE01 + ZCEG11	XCKP706H29	ZCP27 + ZCE06 + ZCPEP16
XCKP511H7 (1)	ZCP25 + ZCE11 + ZCPEN12	XCKP601H29	ZCP26 + ZCE01 + ZCPEP16	XCKP706H44	ZCP27 + ZCE06 + ZCEG13
XCKP518	XCKP2518G11	XCKP602	ZCP26 + ZCE02 + ZCEG11	XCKP710	ZCP27 + ZCE10 + ZCEG11
XCKP5189	XCPR2518G13	XCKP602H29	ZCP26 + ZCE02 + ZCPEP16	XCKP710H29	ZCP27 + ZCE10 + ZCPEP16
XCKP5189H29	XCPR2518P20	XCKP602H44	ZCP26 + ZCE02 + ZCEG13	XCKP710H44	ZCP27 + ZCE10 + ZCEG13
XCKP5189H7	XCPR2518N12	XCKP606	ZCP26 + ZCE06 + ZCEG11	XCKP711 (1)	ZCP27 + ZCE11 + ZCEG11
XCKP518H29	XCKP2518P16	XCKP606H29	ZCP26 + ZCE06 + ZCPEP16	XCKP711H29 (1)	ZCP27 + ZCE11 + ZCPEP16
XCKP518H44	ZCP25 + ZCE01 + ZCY18 + ZCEG13	XCKP606H44	ZCP26 + ZCE06 + ZCEG13	XCKP711H44 (1)	ZCP27 + ZCE11 + ZCEG13
XCKP518H7	ZCP25 + ZCE01 + ZCY18 + ZCPEN12	XCKP610	ZCP26 + ZCE10 + ZCEG11	XCKP718	ZCP27 + ZCE01 + ZCY18 + ZCPEG11
XCKP519	ZCP25 + ZCE01 + ZCY19 + ZCEG11	XCKP610H29	ZCP26 + ZCE10 + ZCPEP16	XCKP7188	ZCP67 + ZCE01 + ZCY18 + ZCEG11
XCKP519H29	ZCP25 + ZCE01 + ZCY19 + ZCPEP16	XCKP610H44	ZCP26 + ZCE10 + ZCEG13	XCKP718H29	ZCP27 + ZCE01 + ZCY18 + ZCPEP16
XCKP519H7	ZCP25 + ZCE01 + ZCY19 + ZCPEN12	XCKP611 (1)	ZCP26 + ZCE11 + ZCEG11	XCKP718H44	ZCP27 + ZCE01 + ZCY18 + ZCEG13
XCKP521	XCKP2521G11	XCKP611H29 (1)	ZCP26 + ZCE11 + ZCPEP16	XCKP719	ZCP27 + ZCE01 + ZCY19 + ZCEG11
XCKP5219	XCPR2521G13	XCKP611H44 (1)	ZCP26 + ZCE11 + ZCEG13	XCKP719H29	ZCP27 + ZCE01 + ZCY19 + ZCPEP16
XCKP5219H29	XCPR2521P20	XCKP618	ZCP26 + ZCE01 + ZCY18 + ZCEG11	XCKP721	ZCP27 + ZCE21 + ZCEG11
XCKP5219H7	XCPR2521N12	XCKP618H29	ZCP26 + ZCE01 + ZCY18 + ZCPEP16	XCKP721H29	ZCP27 + ZCE21 + ZCPEP16
XCKP521H29	XCKP2521P16	XCKP618H44	ZCP26 + ZCE01 + ZCY18 + ZCEG13		
XCKP521H44	ZCP25 + ZCE21 + ZCEG13	XCKP619	ZCP26 + ZCE01 + ZCY19 + ZCEG11		
XCKP521H7	ZCP25 + ZCE21 + ZCPEN12	XCKP621	ZCP26 + ZCE21 + ZCEG11		
XCKP527	XCKP2527G11				

(1) Functional substitution, mounting offset by 10 mm.

Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Design compact (continued)				Compact design plastic type XCKT	
Compact design plastic type XCKP (continued)		XCKP827H44	ZCP28 + ZCE27 + ZCPEG13	ZCKY18 + XCKT601	ZCE01 + ZCY18 + ZCT26G11
XCKP721H44	ZCP27 + ZCE21 + ZCPEG13	XCKP828	ZCP28 + ZCE28 + ZCPEG11	ZCKY18 + XCKT601H29	ZCE01 + ZCY18 + ZCT26P16
XCKP727	ZCP27 + ZCE27 + ZCPEG11	XCKP828H29	ZCP28 + ZCE28 + ZCPEP16	ZCKY45 + XCKT601	ZCE01 + ZCY45 + ZCT26G11
XCKP727H29	ZCP27 + ZCE27 + ZCPEP16	XCKP828H44	ZCP28 + ZCE28 + ZCPEG13	ZCKY45 + XCKT601H29	ZCE01 + ZCY45 + ZCT26P16
XCKP727H44	ZCP27 + ZCE27 + ZCPEG13	XCKP845	ZCP28 + ZCE01 + ZCY45 + ZCPEG11	ZCKY54 + XCKT601	ZCE01 + ZCY54 + ZCT26G11
XCKP728	ZCP27 + ZCE28 + ZCPEG11	XCKP845H29	ZCP28 + ZCE01 + ZCY45 + ZCPEP16	ZCKY54 + XCKT601H29	ZCE01 + ZCY54 + ZCT26P16
XCKP728H29	ZCP27 + ZCE28 + ZCPEP16	XCKP845H44	ZCP28 + ZCE01 + ZCY45 + ZCPEG13	ZCKY55 + XCKT601	ZCE01 + ZCY55 + ZCT26G11
XCKP728H44	ZCP27 + ZCE28 + ZCPEG13	XCKP846	ZCP28 + ZCE01 + ZCY46 + ZCPEG11	ZCKY55 + XCKT601H29	ZCE01 + ZCY55 + ZCT26P16
XCKP745	ZCP27 + ZCE01 + ZCY45 + ZCPEG11	XCKP846H29	ZCP28 + ZCE01 + ZCY46 + ZCPEP16	ZCKY18 + XCKT701	ZCE01 + ZCY18 + ZCT27G11
XCKP745H29	ZCP27 + ZCE01 + ZCY45 + ZCPEP16	XCKP854	ZCP28 + ZCE01 + ZCY54 + ZCPEG11	ZCKY18 + XCKT701H29	ZCE01 + ZCY18 + ZCT27P16
XCKP745H44	ZCP27 + ZCE01 + ZCY45 + ZCPEG13	XCKP854H29	ZCP28 + ZCE01 + ZCY54 + ZCPEP16	ZCKY45 + XCKT701	ZCE01 + ZCY45 + ZCT27G11
XCKP746	ZCP27 + ZCE01 + ZCY46 + ZCPEG11	XCKP854H44	ZCP28 + ZCE01 + ZCY54 + ZCPEG13	ZCKY45 + XCKT701H29	ZCE01 + ZCY45 + ZCT27P16
XCKP746H29	ZCP27 + ZCE01 + ZCY46 + ZCPEP16	XCKP855	ZCP28 + ZCE01 + ZCY55 + ZCPEG11	ZCKY54 + XCKT701	ZCE01 + ZCY54 + ZCT27G11
XCKP754	ZCP27 + ZCE01 + ZCY54 + ZCPEG11	XCKP855H29	ZCP28 + ZCE01 + ZCY55 + ZCPEP16	ZCKY54 + XCKT701H29	ZCE01 + ZCY54 + ZCT27P16
XCKP754H29	ZCP27 + ZCE01 + ZCY54 + ZCPEP16	XCKP855H44	ZCP28 + ZCE01 + ZCY55 + ZCPEG13	ZCKY55 + XCKT701	ZCE01 + ZCY55 + ZCT27G11
XCKP754H44	ZCP27 + ZCE01 + ZCY54 + ZCPEG13	XCKP901	ZCP29 + ZCE01 + ZCPEG11	ZCKY55 + XCKT701H29	ZCE01 + ZCY55 + ZCT27P16
XCKP755	ZCP27 + ZCE01 + ZCY55 + ZCPEG11	XCKP901H44	ZCP29 + ZCE01 + ZCPEG13	ZCKY18 + XCKT801	ZCE01 + ZCY18 + ZCT28G11
XCKP755H29	ZCP27 + ZCE01 + ZCY55 + ZCPEP16	XCKP902	ZCP29 + ZCE02 + ZCPEG11	ZCKY18 + XCKT801H29	ZCE01 + ZCY18 + ZCT28P16
XCKP755H44	ZCP27 + ZCE01 + ZCY55 + ZCPEG13	XCKP902H44	ZCP29 + ZCE02 + ZCPEG13	ZCKY45 + XCKT801	ZCE01 + ZCY45 + ZCT28G11
XCKP801	ZCP28 + ZCE01 + ZCPEG11	XCKP902H7	ZCP29 + ZCE02 + ZCPEN12	ZCKY55 + XCKT801H29	ZCE01 + ZCY55 + ZCT28P16
XCKP801H29	ZCP28 + ZCE01 + ZCPEP16	XCKP910	ZCP29 + ZCE10 + ZCPEG11	XCKT101	XCKT2101G11
XCKP802	ZCP28 + ZCE02 + ZCPEG11	XCKP910H44	ZCP29 + ZCE10 + ZCPEG13	XCKT1018	ZCE01 + ZCT61G11
XCKP802H29	ZCP28 + ZCE02 + ZCPEP16	XCKP910H7	ZCP29 + ZCE10 + ZCPEN12	XCKT101H29	XCKT2101P16
XCKP802H44	ZCP28 + ZCE02 + ZCPEG13	XCKP911 (1)	ZCP29 + ZCE11 + ZCPEG11	XCKT102	XCKT2102G11
XCKP806	ZCP28 + ZCE06 + ZCPEG11	XCKP911H44 (1)	ZCP29 + ZCE11 + ZCPEG13	XCKT1028	ZCE02 + ZCT61G11
XCKP806H29	ZCP28 + ZCE06 + ZCPEP16	XCKP921	ZCP29 + ZCE21 + ZCPEG11	XCKT102H29	XCKT2102P16
XCKP806H44	ZCP28 + ZCE06 + ZCPEG13	XCKP921H44	ZCP29 + ZCE21 + ZCPEG13	XCKT102H7	ZCE02 + ZCT21N12
XCKP810	ZCP28 + ZCE10 + ZCPEG11	XCKP927	ZCP29 + ZCE27 + ZCPEG11	XCKT106	XCKT2106G11
XCKP810H29	ZCP28 + ZCE10 + ZCPEP16	XCKP927H44	ZCP29 + ZCE27 + ZCPEG13	XCKT1068	ZCE06 + ZCT61G11
XCKP810H44	ZCP28 + ZCE10 + ZCPEG13	XCKP928	ZCP29 + ZCE28 + ZCPEG11	XCKT106H29	XCKT2106P16
XCKP810H7	ZCP28 + ZCE10 + ZCPEN12	XCKP928H44	ZCP29 + ZCE28 + ZCPEG13	XCKT106H7	ZCE06 + ZCT21N12
XCKP811 (1)	ZCP28 + ZCE11 + ZCPEG11	XCKP939	ZCP29 + ZCE01 + ZCY39 + ZCPEG11	XCKT110	XCKT2110G11
XCKP811H29 (1)	ZCP28 + ZCE11 + ZCPEP16			XCKT1108	ZCE10 + ZCT61G11
XCKP811H44 (1)	ZCP28 + ZCE11 + ZCPEG13			XCKT110H29	XCKT2110P16
XCKP818	ZCP28 + ZCE01 + ZCY18 + ZCPEG11			XCKT110H7	ZCE10 + ZCT21N12
XCKP818H29	ZCP28 + ZCE01 + ZCY18 + ZCPEP16			XCKT111 (1)	XCKT2111G11
XCKP818H44	ZCP28 + ZCE01 + ZCY18 + ZCPEG13			XCKT111H29 (1)	XCKT2111P16
XCKP819	ZCP28 + ZCE01 + ZCY19 + ZCPEG11			XCKT111H7 (1)	ZCE11 + ZCT21N12
XCKP821	ZCP28 + ZCE21 + ZCPEG11			XCKT118	XCKT2118G11
XCKP821H29	ZCP28 + ZCE21 + ZCPEP16			XCKT1188	ZCE01 + ZCY18 + ZCT61G11
XCKP821H44	ZCP28 + ZCE21 + ZCPEG13			XCKT118H29	XCKT2118P16
XCKP827	ZCP28 + ZCE27 + ZCPEG11			XCKT118H7	ZCE01 + ZCY18 + ZCT21N12
XCKP827H29	ZCP28 + ZCE27 + ZCPEP16			XCKT119	ZCE01 + ZCY19 + ZCT21G11
				XCKT1198	ZCE01 + ZCY19 + ZCT61G11
				XCKT119H29	ZCT21P16 + ZCE01 + ZCY19
				XCKT119H7	ZCE01 + ZCY19 + ZCT21N12
				XCKT121	XCKT2121G11
				XCKT519H7	ZCE01 + ZCY19 + ZCT25N12

(1) Functional substitution, mounting offset by 10 mm.

Old design	New Osiswitch design	Old design	New Osiswitch design	Old design	New Osiswitch design
Design compact (continued)					
Compact design plastic type XCKT (continued)					
XCKT519H7	ZCE01 + ZCY19 + ZCT25N12	XCKT519H29	ZCE01 + ZCY19 + ZCT25P16	XCKT7706	ZCE06 + ZCT27G11
XCKT121H29	XCKT2121P16	XCKT519H7	ZCE01 + ZCY19 + ZCT25N12	XCKT7706H29	ZCE06 + ZCT27P16
XCKT121H7	ZCE21 + ZCT21N12	XCKT521	ZCE21 + ZCT25G11	XCKT7710	ZCE10 + ZCT27G11
XCKT128	ZCE28 + ZCT21G11	XCKT5219	XCTR2521G11	XCKT7710H29	ZCE10 + ZCT27P16
XCKT128H29	XCKT2128P16	XCKT5219H29	XCTR2521P16	XCKT7711 (1)	ZCE11 + ZCT27G11
XCKT139	XCKT2139G11	XCKT5219H7	XCTR2521N12	XCKT7711H29 (1)	ZCE11 + ZCT27P16
XCKT1398	ZCE01 + ZCY39 + ZCT61G11	XCKT521H29	ZCE21 + ZCT25P16	XCKT7718	ZCE01 + ZCY18 + ZCT27G11
XCKT145	XCKT2145G11	XCKT521H7	ZCE21 + ZCT25N12	XCKT7718H29	ZCE01 + ZCY18 + ZCT27P16
XCKT1458	ZCE01 + ZCY45 + ZCT61G11	XCKT528	ZCE28 + ZCT25G11	XCKT7719	ZCE01 + ZCY19 + ZCT27G11
XCKT145H29	XCKT2145P16	XCKT528H29	ZCE28 + ZCT25P16	XCKT7719H29	ZCE01 + ZCY19 + ZCT27P16
XCKT145H7	ZCE01 + ZCY45 + ZCT21N12	XCKT539	ZCE01 + ZCY39 + ZCT25G11	XCKT7721	ZCE21 + ZCT27G11
XCKT146	ZCE01 + ZCY46 + ZCT21G11	XCKT545	ZCE01 + ZCY45 + ZCT25G11	XCKT7721H29	ZCE21 + ZCT27P16
XCKT1468	ZCE01 + ZCY46 + ZCT61G11	XCKT545H29	ZCE01 + ZCY45 + ZCT25P16	XCKT7739	ZCE01 + ZCY39 + ZCT27G11
XCKT146H29	ZCE01 + ZCY46 + ZCT21P16	XCKT545H7	ZCE01 + ZCY45 + ZCT25N12	XCKT7745	ZCE01 + ZCY45 + ZCT27G11
XCKT146H7	ZCE01 + ZCY46 + ZCT21N12	XCKT546	ZCE01 + ZCY46 + ZCT25G11	XCKT7745H29	ZCE01 + ZCY45 + ZCT27P16
XCKT154	ZCE01 + ZCY54 + ZCT21G11	XCKT546H29	ZCE01 + ZCY46 + ZCT25P16	XCKT7746	ZCE01 + ZCY46 + ZCT27G11
XCKT1548	ZCE01 + ZCY54 + ZCT61G11	XCKT546H7	ZCE01 + ZCY46 + ZCT25N12	XCKT7746H29	ZCE01 + ZCY46 + ZCT27P16
XCKT154H29	ZCE01 + ZCY54 + ZCT21P16	XCKT554	ZCE01 + ZCY54 + ZCT25G11	XCKT7754	ZCE01 + ZCY54 + ZCT27G11
XCKT154H7	ZCE01 + ZCY54 + ZCT21N12	XCKT554H29	ZCE01 + ZCY54 + ZCT25P16	XCKT7754H29	ZCE01 + ZCY54 + ZCT27P16
XCKT155	ZCE01 + ZCY55 + ZCT21G11	XCKT554H7	ZCE01 + ZCY54 + ZCT25N12	XCKT7755	ZCE01 + ZCY55 + ZCT27G11
XCKT1558	ZCE01 + ZCY55 + ZCT61G11	XCKT555	ZCE01 + ZCY55 + ZCT25G11	XCKT7755H29	ZCE01 + ZCY55 + ZCT27P16
XCKT155H29	ZCE01 + ZCY55 + ZCT21P16	XCKT555H29	ZCE01 + ZCY55 + ZCT25P16	XCKT801	ZCE01 + ZCT28G11
XCKT155H7	ZCE01 + ZCY55 + ZCT21N12	XCKT555H7	ZCE01 + ZCY55 + ZCT25N12	XCKT801H29	ZCE01 + ZCT28P16
XCKT501	ZCE01 + ZCT25G11	XCKT601	ZCE01 + ZCT26G11	XCKT802	ZCE02 + ZCT28G11
XCKT501H29	ZCE01 + ZCT25P16	XCKT601H29	ZCE01 + ZCT26P16	XCKT802H29	ZCE02 + ZCT28P16
XCKT502	ZCE02 + ZCT25G11	XCKT602	ZCE02 + ZCT26G11	XCKT806	ZCE06 + ZCT28G11
XCKT5029	XCTR2502G11	XCKT602H29	ZCE02 + ZCT26P16	XCKT806H29	ZCE06 + ZCT28P16
XCKT5029H29	XCTR2502P16	XCKT606	ZCE06 + ZCT26G11	XCKT810	ZCE10 + ZCT28G11
XCKT5029H7	XCTR2502N12	XCKT606H29	ZCE06 + ZCT26G11	XCKT810H29	ZCE10 + ZCT28P16
XCKT502H29	ZCE02 + ZCT25P16	XCKT610	ZCE10 + ZCT26G11	XCKT811 (1)	ZCE11 + ZCT28G11
XCKT502H7	ZCE02 + ZCT25N12	XCKT610H29	ZCE10 + ZCT26P16	XCKT811H29 (1)	ZCE11 + ZCT28P16
XCKT506	ZCE06 + ZCT25G11	XCKT611 (1)	ZCE11 + ZCT26G11	XCKT818	ZCE01 + ZCY18 + ZCT28G11
XCKT506H29	ZCE06 + ZCT25P16	XCKT611H29 (1)	ZCE11 + ZCT26P16	XCKT818H29	ZCE01 + ZCY18 + ZCT28P16
XCKT506H7	ZCE06 + ZCT25N12	XCKT618	ZCE01 + ZCY18 + ZCT26G11	XCKT819	ZCE01 + ZCY19 + ZCT28G11
XCKT510	ZCE10 + ZCT25G11	XCKT618H29	ZCE01 + ZCY18 + ZCT26P16	XCKT819H29	ZCE01 + ZCY19 + ZCT28P16
XCKT5109	XCTR2510G11	XCKT619	ZCE01 + ZCY19 + ZCT26G11	XCKT821	ZCE21 + ZCT28G11
XCKT5109H29	XCTR2510P16	XCKT619H29	ZCE01 + ZCY19 + ZCT26P16	XCKT821H29	ZCE21 + ZCT28P16
XCKT5109H7	XCTR2510N12	XCKT621	ZCE21 + ZCT26G11	XCKT839	ZCE01 + ZCY39 + ZCT28G11
XCKT510H29	ZCE10 + ZCT25P16	XCKT621H29	ZCE21 + ZCT26P16	XCKT845	ZCE01 + ZCY45 + ZCT28G11
XCKT510H7	ZCE10 + ZCT25N12	XCKT639	ZCE01 + ZCY39 + ZCT26G11	XCKT845H29	ZCE01 + ZCY45 + ZCT28P16
XCKT511 (1)	ZCE11 + ZCT25G11	XCKT645	ZCE01 + ZCY45 + ZCT26G11	XCKT846	ZCE01 + ZCY46 + ZCT28G11
XCKT511H29 (1)	ZCE11 + ZCT25P16	XCKT645H29	ZCE01 + ZCY45 + ZCT26P16	XCKT846H29	ZCE01 + ZCY46 + ZCT28P16
XCKT511H7 (1)	ZCE11 + ZCT25N12	XCKT646	ZCE01 + ZCY46 + ZCT26G11	XCKT854	ZCE01 + ZCY54 + ZCT28G11
XCKT518	ZCE01 + ZCY18 + ZCT25G11	XCKT646H29	ZCE01 + ZCY46 + ZCT26P16	XCKT854H29	ZCE01 + ZCY54 + ZCT28P16
XCKT5189	XCTR2518G11	XCKT654	ZCE01 + ZCY54 + ZCT26G11	XCKT855	ZCE01 + ZCY55 + ZCT28G11
XCKT5189H29	XCTR2518P16	XCKT654H29	ZCE01 + ZCY54 + ZCT26P16	XCKT855H29	ZCE01 + ZCY55 + ZCT28P16
XCKT5189H7	XCTR2518N12	XCKT655	ZCE01 + ZCY55 + ZCT26G11	XCKT910H7	ZCE10 + ZCT29N12
XCKT518H29	ZCE01 + ZCY18 + ZCT25P16	XCKT655H29	ZCE01 + ZCY55 + ZCT26P16		
XCKT518H7	ZCE01 + ZCY18 + ZCT25N12	XCKT701	ZCE01 + ZCT27G11		
XCKT519	ZCE01 + ZCY19 + ZCT25G11	XCKT701H29	ZCE01 + ZCT27P16		
		XCKT702	ZCE02 + ZCT27G11		
		XCKT702H29	ZCE02 + ZCT27P16		

(1) Functional substitution, mounting offset by 10 mm.

Old design	New Osiswitch design
Design compact (continued)	
Compact design plastic type XCKN	
XCKA110	XCKN2110G11
XCKA102	XCKN2102G11
XCKA121	XCKN2121G11
XCKA118	XCKN2118G11