

The essential guide of Detection

helping you easily
select the right product

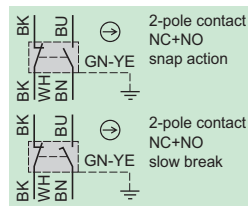


Detection

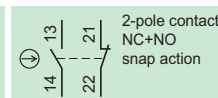


Limit switches	2 to 11
Detection by contact of rigid objects Object speed ≤ 1.5 m/s, OsiSense XC	
Sensors for pressure control	12 to 17
Detection by contact with fluid Electronic or electromechanical pressure and vacuum switches, pressure sensors -1...600 bars, OsiSense XM	
Inductive proximity sensors	18 to 28
Detection without contact of metal objects Sensor / object distance ≤ 60 mm, OsiSense XS	
Capacitive proximity sensors	29
Detection without contact of insulating materials or conductive materials Sensor / object distance ≤ 20 mm, OsiSense XT	
Photo-electric sensors	30 to 41
Detection without contact of any object Detection from a few millimetres to several tens of metres, OsiSense XU	
Ultrasonic sensors	42 and 43
Detection without contact of any object of any material Detection from a few millimetres up to 8 metres, OsiSense XX	
Rotary encoders	44 and 45
Opto-electronic detection Incremental or absolute - single turn and multiturn, OsiSense XCC	
Radio frequency identification	46 and 47
13.56 MHz RFID detection Complete range of RFID tags and compact stations, OsiSense XG	
Safety switches	48
Preventa XCS	

XCMD



XCKT



Miniature XCMD metal, pre-cabled; fixing by the body or by the head

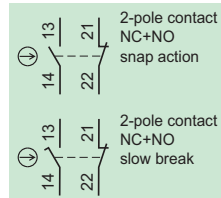
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Steel roller lever	Variable length thermoplastic roller lever	M12 head metal end plunger
Mechanical durability (millions of operating cycles)	10	10	10	10	10	10
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	1.5	0.5
Switches conforming to standard IEC 947-5-1 section 3	⊕	⊕	⊕	⊕	⊕	⊕
Product certification	CE - UL - CSA - CCC					
Degree of protection conforming to IEC 60529	IP 66 and IP 67					
Rated operational characteristics	AC-15; B300 (Ue = 240 V, Ie = 1.5 A) / DC-13; R300 (Ue = 250 V, Ie = 0.1 A)					
Fixing centres (mm)	20					M12 x 1
Body dimensions (mm) W x D x H	30 x 16 x 50					
Connection Cable	Pre-cabled, adjustable direction, length = 1 m (other lengths available on request)					
Complete switch 2-pole NC+NO snap action	XCMD2110L1	XCMD2102L1	XCMD2115L1	XCMD2116L1	XCMD2145L1	XCMD21F0L1
2-pole NC+NO break before make, slow break	XCMD2510L1	XCMD2502L1	XCMD2515L1	XCMD2516L1	XCMD2545L1	XCMD25F0L1
Connector	M12					
Complete switch NC+NO snap action (M12-5 pins)	XCMD2110C12	XCMD2102C12	XCMD2115C12	XCMD2116C12	XCMD2145C12	XCMD21F0C12
1C/O snap action (M12-4 pins) (1)	XCMD2110M12	XCMD2102M12	XCMD2115M12	XCMD2116M12	XCMD2145M12	XCMD21F0M12

(1) 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.

⊕ Positive opening operation.



XCKP/XCKD



⊕ Positive opening operation.

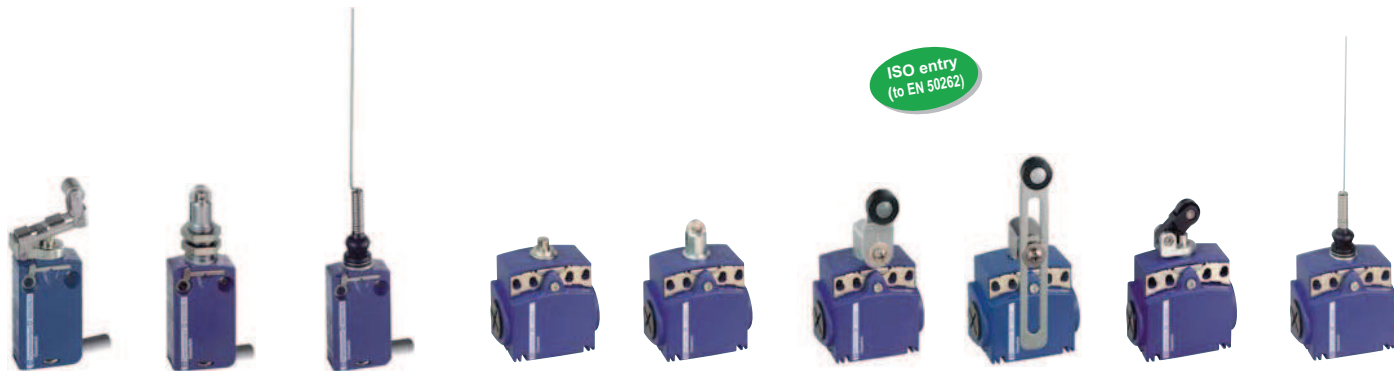


Compact XCKD metal and XCKP plastic conforming to standard EN 50047

Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever plunger, horizontal actuation in 1 direction	M18 head metal end plunger	M18 head steel roller plunger
Mechanical durability (millions of operating cycles)	15	10	15	10	10
Actuation speed (in m/s)	0.5	0.5	1	0.5	0.5
Switches conforming to standard IEC 947-5-1 section 3	⊕	⊕	⊕	⊕	⊕
Product certification	CE - CSA - CCC - GOST				
Degree of protection conforming to IEC 60529	IP 66 and IP 67				
Rated operational characteristics	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry	1 tapped entry for ISO M16 x 1.5 cable gland (3) or M12 connector				
Fixing centres (mm)	20	20	20	M18 x 1	M18 x 1
Body dimensions (mm) W x D x H	31 x 30 x 65				
Metal switches					
Complete switch 2-pole NC+NO snap action	XCKD2110P16	XCKD2102P16	XCKD2121P16	XCKD21H0P16	XCKD21H2P16
2-pole NC+NO break before make, slow break	XCKD2510P16	XCKD2502P16	XCKD2521P16	XCKD25H0P16	XCKD25H2P16
2-pole NC+NO snap action (M12-5 pins)	XCKD2110M12	XCKD2102M12	XCKD2121M12	XCKD21H0M12	XCKD21H2M12
Plastic, double insulated switches					
Complete switch 2-pole NC+NO snap action	XCKP2110P16	XCKP2102P16	XCKP2121P16	XCKP21H0P16	XCKP21H2P16
2-pole NC+NO break before make, slow break	XCKP2510P16	XCKP2502P16	XCKP2521P16	XCKP25H0P16	XCKP25H2P16
2-pole NC+NO snap action (M12-4 pins)	XCKP2110M12	XCKP2102M12	XCKP2121M12	XCKP21H0M12	XCKP21H2M12

(3) For Pg 11 cable entries, replace P16 by G11. Example: XCKD2110P16 becomes XCKD2110G11.

For other cable entries, see customised assembly on page 1/34.



Compact XCKT plastic, 2 cable entries

Retractable steel roller lever plunger	M12 head steel roller plunger	"Cat's whisker"	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Thermoplastic roller lever plunger, horizontal actuation	"Cat's whisker"	"Cat's whisker"
10	10	5	15	10	10	15	5	5
0,5	0.1	1	0.5	0.5	1.5	1	1	1
⊖	⊖	–	⊕	⊖	⊕	⊖	–	–
CE - CSA - CCC - GOST								
IP 66 and IP 67								
AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)								
20	M12 x 1	20	20 or 40					
58 x 30 x 51								
2 tapped entries for ISO M16 x 1.5 cable gland (2)								
XCMD2124L1	XCMD21F2L1	XCMD2106L1	XCKT2110P16	XCKT2102P16	XCKT2118P16	XCKT2145P16	XCKT2121P16	XCKT2106P16
XCMD2524L1	XCMD25F2L1	XCMD2506L1	–	–	–	–	–	–
XCMD2124C12	XCMD21F2C12	XCMD2106C12	–	–	–	–	–	–
XCMD2124M12	XCMD21F2M12	XCMD2106M12	–	–	–	–	–	–

(2) For Pg 11 cable entries, replace P16 by G11. Example: XCKT2110P16 becomes XCKT2110G11.








Application - XCDR and XCPR with manual reset

Thermoplastic roller lever	Variable length Thermoplastic roller lever	Thermoplastic roller lever Ø 50 mm	"Cat's whisker"	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
10	10	10	5	1	1	1	1	1
1.5	1.5	1.5	1	0.5	0.5	1	1	1.5
⊖	⊖	⊖	–	⊖	⊖	⊖	⊖	⊖
CE - CSA - CCC - GOST								
IP 66 and IP 67								
AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)								
1 tapped entry for ISO M20 x 1.5 cable gland (4)								
20	20	20	20	20	20	20	20	20
31 x 30 x 95								
XCKD2118P16	XCKD2145P16	XCKD2139P16	XCKD2106P16	XCDR2110P20	XCDR2102P20	XCDR2121P20	XCDR2127P20	XCDR2118P20
XCKD2518P16	XCKD2545P16	XCKD2539P16	XCKD2506P16	XCDR2510P20	XCDR2502P20	XCDR2521P20	XCDR2527P20	XCDR2518P20
XCKD2118M12	XCKD2145M12	XCKD2139M12	XCKD2106M12	–	–	–	–	–
XCKP2118P16	XCKP2145P16	XCKP2139P16	XCKP2106P16	XCPR2110P20	XCPR2102P20	XCPR2121P20	XCPR2127P20	XCPR2118P20
XCKP2518P16	XCKP2545P16	XCKP2539P16	XCKP2506P16	XCPR2510P20	XCPR2502P20	XCPR2521P20	XCPR2527P20	XCPR2518P20
XCKP2118M12	XCKP2145M12	XCKP2139M12	XCKP2106M12	–	–	–	–	–






(4) For Pg 13.5 cable entries, replace P20 by G13. Example: XCDR2110P20 becomes XCDR2110G13.
For other cable entries, see customised assembly on page 1/34.

Heads - common to miniature and compact bodies

Metal plunger and multi-directional heads

Description	Metal end plunger	Metal end plunger with protective elastomer boot	Steel roller plunger	Retractable steel roller lever plunger	Thermoplastic roller lever plunger, horizontal actuation
					
Reference	⊕ ZCE10	⊕ ZCE11	⊕ ZCE02	⊕ ZCE24 (2)	⊕ ZCE21










Metal rotary heads and levers

Description	Rotary head without lever, spring return, for actuation from LH or RH side	Thermoplastic roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Steel roller lever, track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Thermoplastic roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Steel roller lever, track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)
					
Reference	⊕ ZCE01	⊕ ZCY15 (2)	⊕ ZCY16 (2)	⊕ ZCY25 (2)	⊕ ZCY25 (2)

(1) Recommended for use with bodies: ZCD... / ZCP... / ZCT... (2) Recommended for use with bodies: ZCMD...




Bodies

Miniature

																																			
Type of contact																																			
Reference of metal body	ZCMD21	ZCMD39	ZCMD25	ZCMD37	–	ZCMD21C12	ZCMD21M12	–																											
Cable	<table border="1"> <tr> <td>L = 1 m</td> <td>–</td> <td>–</td> <td>–</td> <td>–</td> <td>ZCMD21L1 (3)</td> <td>–</td> <td>–</td> <td>ZCMD41L1</td> </tr> <tr> <td>L = 2 m</td> <td>–</td> <td>–</td> <td>–</td> <td>–</td> <td>ZCMD21L2 (3)</td> <td>–</td> <td>–</td> <td>ZCMD41L2</td> </tr> <tr> <td>L = 5 m</td> <td>–</td> <td>–</td> <td>–</td> <td>–</td> <td>ZCMD21L5 (3)</td> <td>–</td> <td>–</td> <td>ZCMD41L5</td> </tr> </table>								L = 1 m	–	–	–	–	ZCMD21L1 (3)	–	–	ZCMD41L1	L = 2 m	–	–	–	–	ZCMD21L2 (3)	–	–	ZCMD41L2	L = 5 m	–	–	–	–	ZCMD21L5 (3)	–	–	ZCMD41L5
L = 1 m	–	–	–	–	ZCMD21L1 (3)	–	–	ZCMD41L1																											
L = 2 m	–	–	–	–	ZCMD21L2 (3)	–	–	ZCMD41L2																											
L = 5 m	–	–	–	–	ZCMD21L5 (3)	–	–	ZCMD41L5																											

(3) For contact 2-pole NC+NO slow break, replace 21 by 25. Example: ZCMD21L1 becomes ZCMD25L1

Connection of miniature bodies

Specific pre-cabled connection components					Option: pre-wired M12 connector, L = 2 m	
	for ZCMD21	for ZCMD39	for ZCMD25	for ZCMD37	5-pin	4-pin
L = 1 m	ZCMC21L1	ZCMC39L1	ZCMC25L1	ZCMC37L1		
L = 2 m	ZCMC21L2	ZCMC39L2	ZCMC25L2	ZCMC37L2		
L = 5 m	ZCMC21L5	ZCMC39L5	ZCMC25L5	ZCMC37L5	XZCP1164L2	XZCP1141L2

⊕ Positive opening operation.

switches

Thermoplastic roller lever plunger, vertical actuation	M12 head metal end plunger	M18 head metal end plunger	M12 head steel roller plunger	M18 head steel roller plunger	Spring rod	Spring rod with plastic end	"Cat's whisker"
⊕ ZCE27	⊕ ZCEF0(2)	⊕ ZCEH0(1)	⊕ ZCEF2(2)	⊕ ZCEH2(1)	ZCE08	ZCE07	ZCE06
Thermoplastic roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Steel roller lever, track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Ceramic roller lever	Variable length thermoplastic roller lever	Round, glass fibre rod lever Ø 3 mm L = 125 mm	Metal spring-rod lever	Thermoplastic roller lever Ø 50 mm	Adjustable thermo-plastic roller lever Ø 50 mm
⊕ ZCY18(1)	⊕ ZCY19(1)	⊕ ZCY22	⊕ ZCY45	ZCY55	ZCY91	⊕ ZCY39	⊕ ZCY49

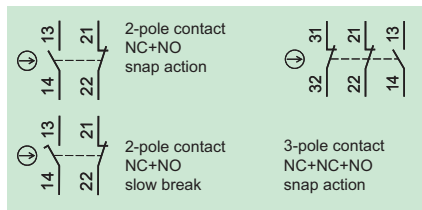
Compact											
Type of contact											
Ref. metal body	ZCD21	ZCD39	ZCD25	ZCD27	ZCD28	ZCD29	ZCD37	ZCD21M12	-	-	-
Ref. plastic body	ZCP21	ZCP39	ZCP25	ZCP27	ZCP28	ZCP29	ZCP37	-	ZCP21M12	ZCT21P16 (1)	ZCT25P16 (1)

Interchangeable outlet for cable gland							Option: pre-wired M12 connector, L = 2 m		ZCT Pg 11 cable gland versions: replace the suffix P16 by G11. Example: ZCT21P16 becomes ZCT21G11	
Description	For ISO M16 cable gland	For ISO M20 cable gland	For Pg 11 cable gland	For Pg 13.5 cable gland	For 1/2" NPT cable gland	For PF 1/2 (G12) cable gland			ZCT 1/2" NPT versions: replace the suffix P16 by N12 (adaptor). Example: ZCT21P16 becomes ZCT21N12	
Metal	ZCDEP16	ZCDEP20	ZCDEG11	ZCDEG13	ZCDEN12	ZCDEF12	XZCP1164L2	XZCP1141L2	1 Cable entry 1/2" NPT	
Plastic	ZCPEP16	ZCPEP20	ZCPEG11	ZCPEG13	ZCPEN12	ZCPEF12			1 Cable entry Pg11	

ISO entry
(to EN 50262)



XCKM



Type XCKM metal, 3 cable entries, XCKL metal, 1 cable entry

Type of operator	Metal end plunger	Steel roller plunger	Roller lever plunger, horizontal actuation in 1 direction	Thermoplastic roller lever	"Cat's whisker"
Mechanical durability (millions of operating cycles)	20	20	20	15	10
Actuation speed (in m/s)	0.5	0.5	1.5	1.5	0.5
Product certification	CE - UL - CSA - CCC - GOST - C-TICK - BV				
Degree of protection conforming to IEC 60529	IP 665				
Rated operational characteristics	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)				
Cable entry (1)	XCKM	3 tapped entries for ISO M20 x 1.5 cable gland (2 entries fitted with blanking plugs)			
	XCKL	1 cable entry with cable gland			
Fixing centres (mm)	41				
Body dimensions (mm) W x D x H	XCKM / XCKL	64 x 30 x 64 / 52 x 30 x 72			

Complete switch	XCKM				
2-pole NC+NO snap action	⊕ XCKM110H29	⊕ XCKM102H29	⊖ XCKM121H29	⊖ XCKM115H29	XCKM106H29
2-pole NC+NO, break before make, slow break	⊕ XCKM510H29	⊕ XCKM502H29	⊖ XCKM521H29	⊖ XCKM515H29	-
Complete switch	XCKL				
2-pole NC+NO snap action	⊕ XCKL110	⊕ XCKL102	⊖ XCKL121	⊖ XCKL115	XCKL106

(1) For Pg 13.5 cable entries delete the reference suffix H29. Example: XCKM110H29 becomes XCKM110.

⊕ Positive opening operation.

Classic - XCKM, XCKL, Customised assembly - Body/contact sub-assemblies



Type XCKM metal, 3 cable entries

Type of contact

Type of contact	2-pole NC+NO snap action	2-pole NC+NO slow break	3-pole NC+NC+NO snap action	3-pole NC+NC+NO slow break
Reference of body with contact block	⊕ ZCKM1H29	⊖ ZCKM5H29	⊕ ZCKMD39H29	⊖ ZCKMD37H29
XCKL reference of body with contact block (2)	⊕ ZCKL1	⊖ ZCKL5	-	-
Reference of contact block only	⊕ XE2SP2151	⊕ XE2NP2151	⊕ XE3SP2141	⊖ XE3NP2141

(2) For cable entry 1/2" NPT, add H7. Example: XCKL1 becomes XCKL1H7

Operating heads, complete or for customer assembly



Complete switch

=



Body/contact assembly

+



Head

+



Lever

Rotary or multi-directional heads

with thermoplastic roller lever (2)

with steel roller lever (2)

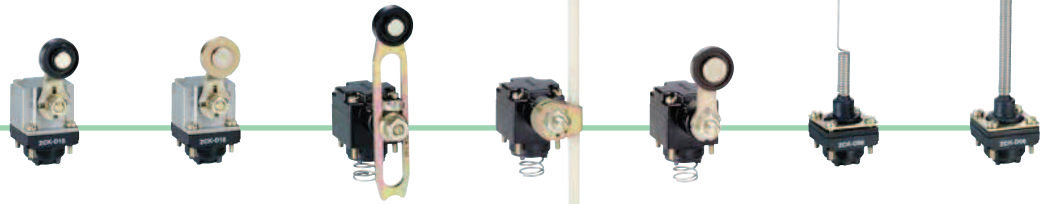
with variable length thermoplastic roller lever (2)

with Ø 6 mm thermoplastic rod L = 200 mm (3)

with thermoplastic roller lever (3) for actuation from left **AND** right or left **OR** right

with "Cat's whisker"

with spring rod



Reference

↻ ZCKD15

↻ ZCKD16

ZCKD41

ZCKD59

↻ ZCKD31

ZCKD06

ZCKD08

Plunger heads

with metal end plunger

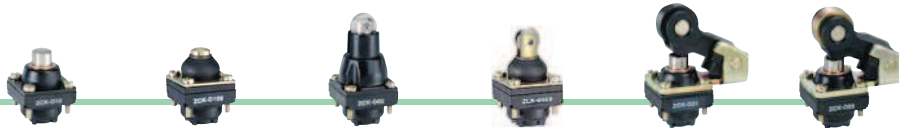
with metal end plunger and protective boot

with steel roller plunger

with steel roller plunger and protective boot

with thermoplastic roller lever plunger, horizontal actuation in 1 direction

with steel roller lever plunger, horizontal actuation in 1 direction



Reference

↻ ZCKD10

↻ ZCKD109

↻ ZCKD02

↻ ZCKD029

↻ ZCKD21

↻ ZCKD23

Rotary heads and separate levers

spring return, for actuation from left **AND** right or left **OR** right

lever with thermoplastic roller (2)

lever with steel roller (2)

variable length lever with thermoplastic roller (2)

variable length lever with steel roller (2)

rod, Ø 6 mm thermoplastic L = 200 mm (3)



Reference

↻ ZCKD05

↻ ZCKY31

↻ ZCKY33

ZCKY41

ZCKY43

ZCKY59

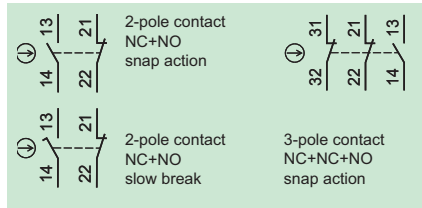
(2) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

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

ISO entry
(to EN 50262)



XCKJ



Type XCKJ metal, fixed body, conforming to standard EN 50041

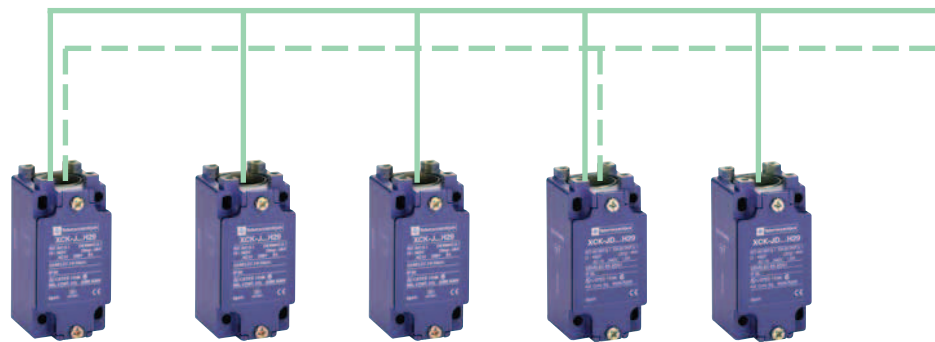
Type of operator	Metal end plunger	Steel roller plunger	Thermoplastic roller lever	Steel roller lever	Variable length thermoplastic roller lever	Polyamide Ø 6 mm rod lever L = 200 mm
Mechanical durability (millions of operating cycles)	30	25	30	30	30	30
Actuation speed (in m/s)	0.5	1	1.5	1,5	1.5	1.5
Product certification	CE - UL - CSA - CCC - GOST - C-TICK - BV					
Degree of protection conforming to IEC 60529	IP 667					
Rated operational characteristics	AC-15; A300 (Ue = 240 V, Ie = 3 A) / DC-13; Q300 (Ue = 250 V, Ie = 0.27 A)					
Cable entry (1)	1 tapped entry for ISO M20 x 1.5 cable gland					
Fixing centres (mm)	30 x 60					
Body dimensions (mm) W x D x H	40 x 44 x 77					

Complete switch	M20	N2-pole NC+NO snap action	⊖ XCKJ161H29	⊕ XCKJ167H29	⊖ XCKJ10511H29	⊕ XCKJ10513H29	XCKJ10541H29	XCKJ10559H29
		2-pole NC+NO break before make, slow break	⊖ XCKJ561H29	⊕ XCKJ567H29	⊖ XCKJ50511H29	⊕ XCKJ50513H29	XCKJ50541H29	XCKJ50559H29
	1/2" NPT	2-pole NC+NO snap action	⊖ XCKJ161H7	⊕ XCKJ167H7	⊖ XCKJ10511H7	⊕ XCKJ10513H7	XCKJ10541H7	XCKJ10559H7
		M12 5P 2-pole NC+NO snap action	⊖ XCKJ161D	⊕ XCKJ167D	⊖ XCKJ10511D	⊕ XCKJ10513D	XCKJ10541D	XCKJ10559D

(1) For Pg 13.5 cable entry delete the reference suffix H29. Example: XCKJ161H29 becomes XCKJ161.

⊖ Positive opening operation.

Industrial - XCKJ, Customised assembly - Body/contact sub-assemblies



Type XCKJ metal, 1 cable entry

Type of contact						
		2-pole NC+NO snap action	2-pole NC+NO slow break	2 C/O snap action Simultaneous	3-pole NC+NC+NO snap action	3-pole NC+NC+NO slow break
Cable entry (1)		1 tapped entry for ISO M20 x 1.5 cable gland				
Reference of body with contact block	M20	⊖ ZCKJ1H29	⊖ ZCKJ5H29	ZCKJ2H29	⊕ ZCKJD39H29	⊕ ZCKJD37H29
	Pg13	⊖ ZCKJ1	⊖ ZCKJ5	ZCKJ2	-	-
	1/2" NPT	⊖ ZCKJ1H7	⊖ ZCKJ5H7	ZCKJ2H7	-	-
	M12 (5 pin)	⊖ ZCKJ1D	⊖ ZCKJ5D	-	-	-
Reference of contact block only		⊖ XE2SP2151	⊖ XE2NP2151	-	⊖ XE3SP2141	⊖ XE3NP2141

Operating heads, complete or for customer assembly



Complete switch

=



Body/contact assembly

+



Head

+



Lever

Plunger or multi-directional heads

with reinforced steel roller end plunger

with metal end plunger

with thermoplastic roller lever plunger, 1 direct. of actuation

with steel roller lever plunger, 1 direct. of actuation

with steel roller end plunger

with steel ball bearing end plunger

End steel roller plunger with protective boot



Référence

⊖ ZCKE67

⊖ ZCKE61

⊖ ZCKE21

⊖ ZCKE23

⊖ ZCKE62

⊖ ZCKE66

⊖ ZCKE629

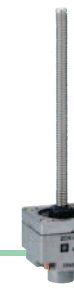
with metal side plunger

Side steel roller plunger, horizontal

Side steel roller plunger, vertical

with spring rod

with "Cat's whisker"



Reference

⊖ ZCKE63

⊖ ZCKE64

ZCKE65

ZCKE08

ZCKE06

Separate rotary heads and levers

spring return for actuation from left AND right or left OR right

lever with thermoplastic roller (2)

lever with steel roller (2)

variable length lever with thermoplastic roller (2)

variable length lever with steel roller (2)

rod, Ø 6 mm thermoplastic L = 200 mm (2)

square rod lever, steel, Ø 3 mm L = 125 mm (2)

round rod lever, steel, Ø 3 mm L = 125 mm (2)

spring lever with thermoplastic end (3)

spring-metal rod lever (3)



Reference

⊖ ZCKE05

⊖ ZCKY11

⊖ ZCKY13

ZCKY41

ZCKY43

ZCKY59

ZCKY51

ZCKY53

ZCKY81

ZCKY91

stay put for actuation from left AND right

forked arm lever with thermoplastic rollers, 1 track (2)

forked arm lever with thermoplastic rollers, 2 track (2)



Reference

ZCKE09

ZCKY71

ZCKY61

(2) Adjustable throughout 360° in 5° steps, or in 45° steps by reversing the lever mounting.
 (3) Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.

