8

SENSING

Contents

OsiSense - Sense the Difference

OsiSense range of products offers the complete solution in sensor detection. This includes presence and position sensors such as limit switches, photo-electric, proximity, ultrasonic, encoders; identification (RFID system) and process control; pressure switches and safety devices such as light curtains and safety switches.

We continually invest in research and development, ensuring we can offer our customers the best products and services.

Schneider Electric

Osisense XS - Proximity Inductive Switch

Features
- Metal case
- Pre-cabled or connector types available
- Operation mode NO

Technical Data
Enclosure rating: IP67
Ambient temperature: -25 to 80ºC

XS Inductive Promity Sensors

Sensing Range (mm)	Size	Type	Output	Connection Method	Part No.
2.5	M8	Short flush mountable	PNP N/O	Cable 2m length	XS108B3PAL2
				M8 connector	XS108B3PAM8
4	M12	Short flush mountable	PNP N/O	Cable 2m length	XS112B3PAL2
				M12 connector	XS112B3PAM12
8	M18	Short flush mountable	PNP N/O	Cable 2m length	XS118B3PAL2
				M12 connector	XS118B3PAM12
15	M30	Short flush mountable	PNP N/O	Cable 2m length	XS130B3PAL2
				M12 connector	XS130B3PAM12
2.5	M8	Long flush mountable	PNP N/O	Cable 2m length	XS608B1PAL2
				M12 connector	XS608B1PAM12
4	M12	Long flush mountable	AC/DC N/O	Cable 2m length	XS612B1MAL2
		Short flush mountable	AC/DC N/O	½" 20UNF connector	XS612B1MAU20
		Long flush mountable	PNP N/O	Cable 2m length	XS612B1PAL2
				M12 connector	XS612B1PAM12
8	M12	Long flush mountable	AC/DC N/O	Cable 2m length	XS618B1MAL2
				½" 20UNF connector	XS618B1MAU20
	M18	Long flush mountable	PNP N/O	Cable 2m length	XS618B1PAL2
				M12 connector	XS618B1PAM12
15	M30	Long flush mountable	AC/DC N/O	Cable 2m length	XS630B1MAL2
				½" 20UNF connector	XS630B1MAU20
			PNP N/O	Cable 2m length	XS630B1PAL2
				M12 connector	XS630B1PAM12

Accessories

Type	Description	Part No.
Pre Wired Connectors - 2 metres	M8 Straight	XZCP0566L2
	M8 Angled	XZCP0666L2
	M12 Straight	XZCP1141L2
	M12 Angled	XZCP1241L2
	½" 20UNF Straight	XZCP1865L2
	½" 20UNF Angled	XZCP1965L2

TE Controls • ETS • GAP • Western Automation

OMRON

E2A Series

Extended sensing range inductive sensor in cylindrical brass housing

The high quality and the long-life design of the E2A extended sensing distance provide high operational reliability, accurate performance and long sensor lifetime for a wide range of applications.

Features
- Extended (double) sensing distance
- IP67 and IP69K for highest water protection
- DC 3-wire (NO, NC)
- Wide temperature range -40 to 70°C
- 200mA max load current
- Wide installation and connectivity range through modular concept

Pre-wired

Size	▪ -	- ▪	Sensing Distance	Thread Length (overall)	Output Configuration	Operation mode NO Part No.	Operation mode NC Part No.
M8	▪	-	2.0mm	27 (40)mm	PNP[1]	E2A-S08KS02-WP-B1 2M[2]	E2A-S08KS02-WP-B2 2M[2]
	-	▪	4.0mm	21 (40)mm	PNP[1]	E2A-S08KN04-WP-B1 2M[2]	E2A-S08KN04-WP-B2 2M[2]
M12	▪	-	4.0mm	34 (50)mm	PNP[1]	E2A-M12KS04-WP-B1 2M	E2A-M12KS04-WP-B2 2M
	-	▪	8.0mm	27 (50)mm	PNP[1]	E2A-M12KN08-WP-B1 2M	E2A-M12KN08-WP-B2 2M
M18	▪	-	8.0mm	39 (59)mm	PNP[1]	E2A-M18KS08-WP-B1 2M	E2A-M18KS08-WP-B2 2M
	-	▪	16.0mm	29 (59)mm	PNP[1]	E2A-M18KN16-WP-B1 2M	E2A-M18KN16-WP-B2 2M
M30	▪	-	15.0mm	44 (64)mm	PNP[1]	E2A-M30KS15-WP-B1 2M	E2A-M30KS15-WP-B2 2M
	-	▪	20.0mm[3]	29 (64)mm	PNP[1]	E2A-M30KN20-WP-B1 2M	E2A-M30KN20-WP-B2 2M

Connector types (M12)

Size	▪ -	- ▪	Sensing Distance	Thread Length (overall)	Output Configuration	Operation mode NO Part No.	Operation mode NC Part No.
M8	▪	-	2.0mm	27 (43)mm	PNP[1]	E2A-S08KS02-M1-B1[2]	E2A-S08KS02-M1-B2[2]
	-	▪	4.0mm	21 (43)mm	PNP[1]	E2A-S08KN04-M1-B1[2]	E2A-S08KN04-M1-B2[2]
M12	▪	-	4.0mm	24 (48)mm	PNP[1]	E2A-M12KS04-M1-B1	E2A-M12KS04-M1-B2
	-	▪	8.0mm	27 (48)mm	PNP[1]	E2A-M12KN08-M1-B1	E2A-M12KN08-M1-B2
M18	▪	-	8.0mm	39 (53)mm	PNP[1]	E2A-M18KS08-M1-B1	E2A-M18KS08-M1-B2
	-	▪	16.0mm	29 (53)mm	PNP[1]	E2A-M18KN16-M1-B1	E2A-M18KN16-M1-B2
M30	▪	-	15.0mm	44 (58)mm	PNP[1]	E2A-M30KS15-M1-B1	E2A-M30KS15-M1-B2
	-	▪	20.0mm[3]	29 (58)mm	PNP[1]	E2A-M30KN20-M1-B1	E2A-M30KN20-M1-B2

[1] NPN models are available. For ordering replace "-B1" or "-B2" by "-C1" or "-C2".
[2] M8 sized housings are only available in stainless steel (SUS 303).
[3] Models with longer sensing distances of 30mm & 35mm are available.

Cable Connectors

Size	Type	Features	Material Nut	Cable	Straight Part No.	Angled Part No.
M12		PRO	3 wire	Brass (CuZn)	PVC 2m	XS2F-M12PVC3S2M-EU	XS2F-M12PVC3A2M-EU
					PUR 2m	XS2F-M12PUR3S2M-EU	XS2F-M12PUR3A2M-EU

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E3Z Series

General purpose sensor in compact plastic housing.

The compact housing size and the high-power LED provide an excellent performance size ratio and the high optical precision and long sensor lifetime make the sensor the first choice for standard and challenging applications.

Features
- Minimal optical axis deviation for easy alignment
- IP67 and IP69K for highest water resistance
- Intensive shielding for highest noise immunity (EMC)
- Multiple molding housing for high mechanical resistance

OMRON

Compact Square

Sensor Type	Sensing Distance	Connection Method				NPN output Part No.*1	PNP output Part No.*1
Through-beam	30m (infrared light)	-	-	2m		E3Z-T62 2M	E3Z-T82 2M
		■	-	-		E3Z-T67	E3Z-T87
	10m (Red light)	-	-	2m		E3Z-T61A 2M	E3Z-T81A 2M
		■	-	-		E3Z-T66A	E3Z-T86A
Retro-reflective with M.S.R.	0.1 to 4m*2 (infrared light)	-	-	2m		E3Z-R61 2M	E3Z-R81 2M
		■	-	-		E3Z-R66	E3Z-R86
Retro-reflective without M.S.R.	0.1 to 5m*2 (infrared light)	-	-	2m		E3Z-R61-4 2M	E3Z-R81-4 2M
		■	-	-		E3Z-R66-4	E3Z-R86-4
Diffuse-reflective	1m (adjustable) (infrared light)	-	-	2m		E3Z-D62 2M	E3Z-D82 2M
		■	-	-		E3Z-D67	E3Z-D87
Diffuse-reflective wide beam	100m (adjustable) (infrared light)	-	-	2m		E3Z-D61 2M	E3Z-D81 2M
		■	-	-		E3Z-D66	E3Z-D86

For ordering pigtail versions replace '2m' of cable types with: M1J: M12 with 30cm cable / M3J: M8 4-pin with 30cm cable / M5J: M8 3-pin with 30cm cable

*1 Light-ON/Dark-ON switch selectable
*2 Measured with E39-R1S

Cable Connectors

Size	Type	Features	Material		Straight	Angled
			Nut	Cable	Part No.	Part No.
M8	PRO	4 pin	Brass (CuZn)	PVC 2m	XS3F-M8PVC4S2M-EU	XS3F-M8PVC4A2M-EU
				PUR 2m	XS3F-M8PUR4S2M-EU	XS3F-M8PUR4A2M-EU

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Osisense XU - Photoelectric Switch

Multi-mode - OsiConcept - Key features

- Self teach precise set-up multi-mode detection
- Programmable through 4 modes of operation
- Programmable NO/NC switching
- Connection: 2m pre-cabled (L2) or plug-in connector (M12)

Sensing distance depending on mode and format

	M8 Format	Miniature Format	Compact 50x50 Format	Compact 92x71 Format
Diffuse	0.3	0.4	0.8	2
Background suppression	0.12	0.1	0.28	1.3
Polarised reflex	2	3	4	11
Through-beam	18	10	30	40

Multi-Mode Sensors

Type	Mode	Output	Connection Method	Part No.
M18 Metal	Multi-mode (4 in 1)	PNP	M12*	XUB0BPSNM12
M18 Plastic	Multi-mode (4 in 1)	PNP	M12*	XUB0APSNM12
Miniature plastic	Multi-mode (4 in 1)	PNP	M8*	XUM0APSAM8
Compact 50x50	Multi-mode (4 in 1)	PNP/NPN	M12*	XUK0AKSAM12
Compact 92x71	Multi-mode (4 in 1)	PNP/NPN	M12*	XUX0AKSAM12
Through-beam Accessory				
M18 Metal	Transmitter		M12*	XUB0BKSNM12T
M18 Plastic	Transmitter		M12*	XUB0AKSNM12T
Miniature plastic	Transmitter		M8*	XUM0AKSAM8T
Compact 50x50	Transmitter		M12*	XUK0AKSAM12T
Compact 92x71	Transmitter		M12*	XUX0AKSAM12T

*Version available with 2m of cable instead of M12 connector, just change in the Part No suffix (M12) to (L2) to get reference.

Single Function Sensors

Type	Mode	Sensing Distance (m)	Output	Connection Method	Part No.
M18 Metal	Diffuse	0.6	PNP, NO	M12*	XUB5BPANM12
	Polarised reflex	2	PNP, NO	M12*	XUB9BPANM12
	Reflex	4	PNP, NO	M12*	XUB1BPANM12
	Receiver thought-beam	15	PNP, NO	M12*	XUB2BPANM12R
	Transmitter thought-beam	15	PNP, NO	M12*	XUB2BKSNM12T
Miniature Plastic	Diffuse	1	PNP, NO	M8*	XUM5APCNM8
	Polarised reflex	5	PNP, NO	M8*	XUM9APCNM8
	Receiver thought-beam	15	PNP, NO	M8*	XUM2APCNM8R
	Transmitter thought-beam	15	PNP, NO	M8*	XUM2AKCNM8T
Compact 50x50	Diffuse	1	PNP, NO	M12*	XUK5APANM12
	Polarised reflex	5	PNP, NO	M12*	XUK9APANM12
	Reflex	7	PNP, NO	M12*	XUK1APANM12
	Receiver thought-beam	30	PNP, NO	M12*	XUK2APANM12R
	Transmitter thought-beam	30	PNP, NO	M12*	XUK2AKSNM12T
Compact 92x71	Diffuse	2.1	PNP, NO	M12*	XUX5APANM12
	Polarised reflex	11	PNP, NO	M12*	XUX9APANM12
	Reflex	14	PNP, NO	M12*	XUX1APANM12
	Receiver thought-beam	40	PNP, NO	M12*	XUX2APANM12R
	Transmitter thought-beam	40	PNP, NO	M12*	XUX0AKSAM12T

*Version available with 2m of cable instead of M12 connector, just change in the Part No suffix (M12 or M8) to (L2) to get reference

Fork Sensors

Type	Mode	Sensing Range (mm)	Output	Connection Method	Part No.
Fork sensor	Through-beam	80	PNP, NO	M8*	XUVR0608PANM8
		50	PNP, NO	M8*	XUVR0605PANM8
		120	PNP, NO	M8*	XUVR1212PANM8

Accessories

Pre-Wired Connector

Mounting	Connection Method	Cable Length	Part No.
Straight	M8 - 3 pin	2	XZCP0941L2
Elbowed	M8 - 3 pin	2	XZCP1041L2
Straight	M12 - 4 pin	2	XZCP1141L2
Elbowed	M12 - 4 pin	2	XZCP1241L2
Straight	M12 - 4 pin	5	XZCP1141L5
Elbowed	M12 - 4 pin	5	XZCP1241L5
Straight	M12 - 4 pin	10	XZCP1141L10
Elbowed	M12 - 4 pin	10	XZCP1241L10

Ancillaries

Type	Size	Part No.
Reflector	24x21 for short distance	XUZC24
	50x50	XUZC50
	80mm diameter	XUZC80
	100x100 for long distance	XUZC100
Fixing bracket with ball Joint	M18 plastic	XUZA218
	M18 stailess steel	XUZA118
Fixing bracket	XUM miniature	XUZAM02
	XUK compact 50x50	XUZA51
	XUK compact 92x71	XUZX2000

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TE Controls ETS GAP Western Automation

SENSING

LS TITAN Series

Safety function by positive opening of contacts to IEC/EN 60 947-5-1

Basic Switch without Actuator

Type		Part No.
Narrow version	Standard action	LS-S11
	Snap action	LS-S11S

Actuators

Type	Part No.
Roller plunger	LS-XP
Spring-rod actuator	LS-XS
Roller lever	LS-XL
Angled roller lever	LS-XLA
Rotary lever	LS-XRL
Adjustable roller lever	LS-XRLA
Actuating rod	LS-XRR

MOELLER
An Eaton Brand

Osiswitch® Universal, Osiconcept®

Miniature design, metal, type XCM D, Pre-cabled

Schneider Electric

XCM D Plunger Type

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

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

XCM D Rotary Type

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

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

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LIMIT SWITCHES
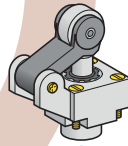
8

Schneider Electric

Osiswitch® Classic

Metal, conforming to CENELEC EN 50041, type XCK J
Fixed body
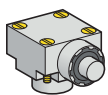Adaptable sub-assemblies: standard bodies
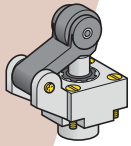
Thermoplastic roller
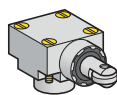lever plunger,
1 direction of actuation

ZCK E21

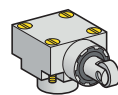Steel roller
lever plunger,
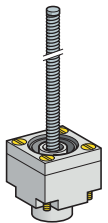1 direction of actuation

ZCK E23

Side metal
plunger

ZCK E63

Side steel roller
plunger,
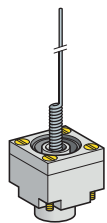horizontal *(1)*

ZCK E64
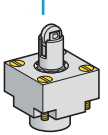
Side steel roller
plunger,
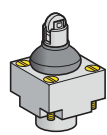vertical *(1)*

ZCK E65

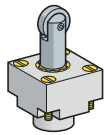Spring rod

ZCK E08

"Cat's whisker"

ZCK E06

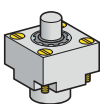End reinforced
steel roller plunger

ZCK E67

End steel roller
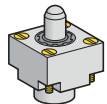plunger with
protective boot

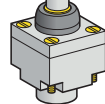**ZCK E629**

End steel roller
plunger

ZCK E62

End metal
plunger

ZCK E61

End steel ball
bearing plunger

ZCK E66

End metal plunger
with protective boot

ZCK E619
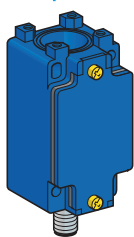
Body with 2-pole contact, fixed,
1 step,
M12 connector *(2)*
ZCK J1D, J5D, J6D, J7D
ZCK J8D
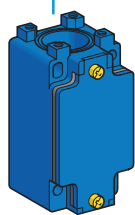
Body with contact, cable
entry for Pg 13, fixed,
1 step *(2) (3)*
ZCK JD3●,
ZCK J1, J5, J6, J7, J9

Body with contact, cable
entry for Pg 13, fixed,
1 step *(2) (3)*
ZCK J2, J8

Body with contact, cable
entry for Pg 13, fixed,
2 step *(2) (3)*
ZCK J4
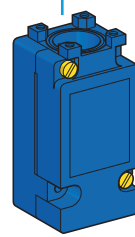
Body with contact, cable
entry for Pg 13, plug-in,
1 or 2 step *(2) (3)*
ZCK J11, J21, J41

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Fixed bodies with 2-pole contact

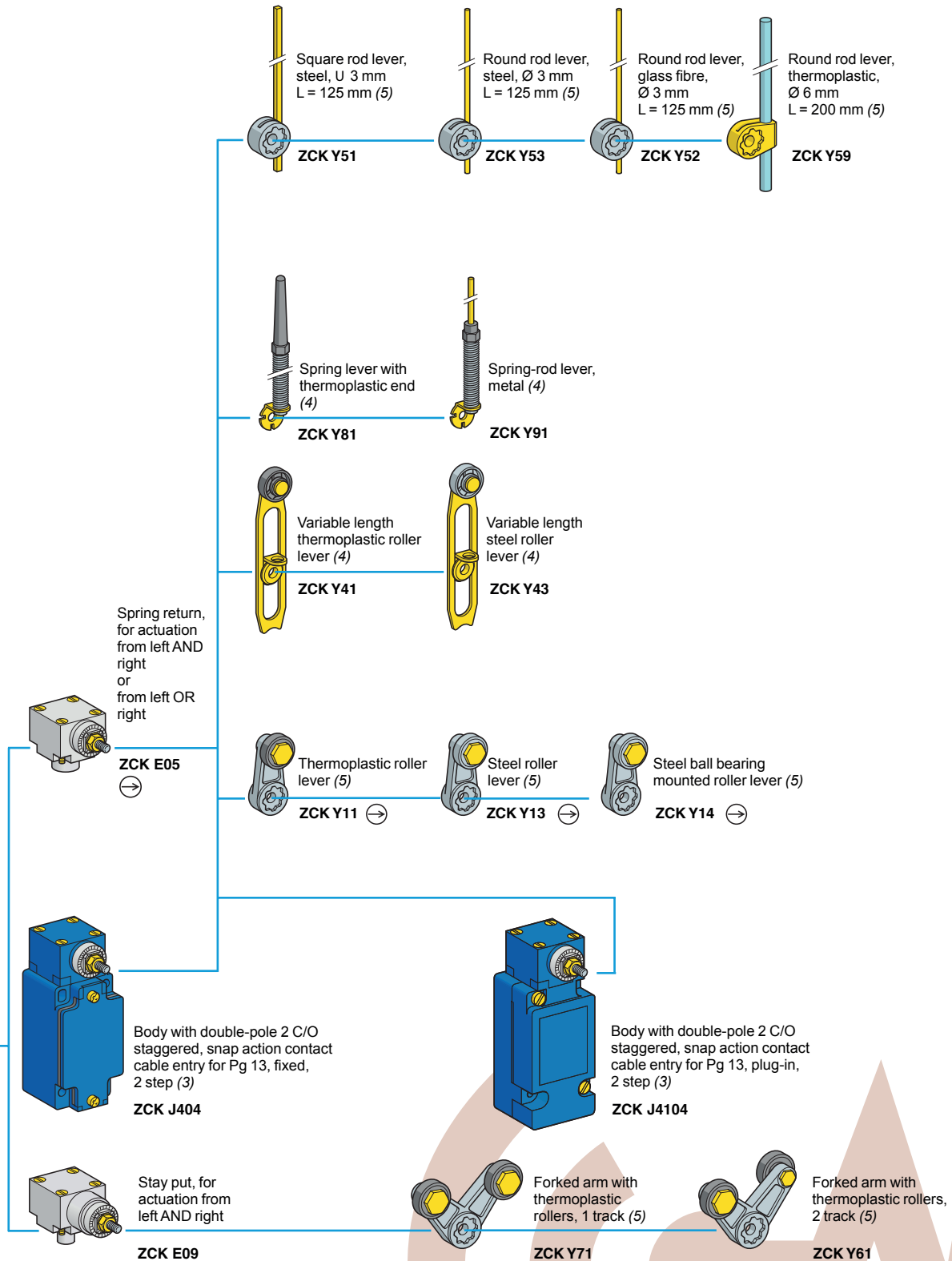| Type	With contact block	Positive operation	Cable entry	Part No.
1 Step	N/C + N/O snap action	⊖		ZCK J1H29
	2 C/O simultaneous, snap action	-		ZCK J2H29
	N/C + N/O break before make, slow break	⊖		ZCK J5H29
	N/C + N/C break before make, slow break	⊖	ISO M20 x 1.5	ZCK J6H29
	N/C + N/C simultaneous, slow break	⊖		ZCK J7H29
	N/O + N/O simultaneous, slow break	-		ZCK J8H29
	N/C + N/C snap action	⊖		ZCK J9H29
2 Step	2 C/O staggered, snap action	-		ZCK J4H29

Square rod lever, steel, U 3 mm L = 125 mm (5) **ZCK Y51**

Round rod lever, steel, Ø 3 mm L = 125 mm (5) **ZCK Y53**

Round rod lever, glass fibre, Ø 3 mm L = 125 mm (5) **ZCK Y52**

Round rod lever, thermoplastic, Ø 6 mm L = 200 mm (5) **ZCK Y59**

Spring lever with thermoplastic end (4) **ZCK Y81**

Spring-rod lever, metal (4) **ZCK Y91**

Variable length thermoplastic roller lever (4) **ZCK Y41**

Variable length steel roller lever (4) **ZCK Y43**

Spring return, for actuation from left AND right or from left OR right **ZCK E05** ⊖

Thermoplastic roller lever (5) **ZCK Y11** ⊖

Steel roller lever (5) **ZCK Y13** ⊖

Steel ball bearing mounted roller lever (5) **ZCK Y14** ⊖

Body with double-pole 2 C/O staggered, snap action contact cable entry for Pg 13, fixed, 2 step (3) **ZCK J404**

Body with double-pole 2 C/O staggered, snap action contact cable entry for Pg 13, plug-in, 2 step (3) **ZCK J4104**

Stay put, for actuation from left AND right **ZCK E09**

Forked arm with thermoplastic rollers, 1 track (5) **ZCK Y71**

Forked arm with thermoplastic rollers, 2 track (5) **ZCK Y61**

⊖ : 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.

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