

Limit switches

OsiSense XC Standard

Compact design, plastic, type XCK P
Complete switches with 1 cable entry

1

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

References of complete switches with 1 ISO M16 x 1.5 cable entry (2)							
	2-pole NC + NO snap action (XE2S P2151)	XCK P2110P16 	XCK P2111P16 	XCK P2102P16 	XCK P2121P16 	XCK P2127P16 	XCK P2128P16
	2-pole NC + NO break before make, slow break (XE2N P2151)	XCK P2510P16 	XCK P2511P16 	XCK P2502P16 	XCK P2521P16 	XCK P2527P16 	XCK P2528P16
	2-pole NC + NC 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 NC + NC 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 NC + NC + NO 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 NC + NC + NO 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	

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

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

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

Characteristics				
Switch actuation	On end	By 30° cam		
Type of actuation				
Maximum actuation speed	0.5 m/s		1 m/s	
Mechanical durability (in millions of operating cycles)	15	10	15	
Minimum force or torque	For tripping 15 N For positive opening 45 N	12 N 36 N	6 N 18 N	
Cable entry (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 1/176.

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

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

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

Reference	2-pole NC + NO snap action (XE2S P2151)	2-pole NC + NO break before make, slow break (XE2N P2151)	2-pole NC + NC snap action (XE2S P2141)	2-pole NC + NC simultaneous, slow break (XE2N P2141)	3-pole NC + NC + NO snap action (XE3S P2141)	3-pole NC + NC + NO break before make, slow break (XE3N P2141)	
XCK P21H0P16	XCK P21H2P16	XCK P2118P16	XCK P2145P16	XCK P2139P16	XCK P2149P16	XCK P2106P16	
XCK P25H0P16	XCK P25H2P16	XCK P2518P16	XCK P2545P16	XCK P2539P16	XCK P2549P16	XCK P2506P16	
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 01 + ZCY 49	ZCP 29 + ZCP EP16 + ZCE 06	
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 01 + ZCY 49	ZCP 27 + ZCP EP16 + ZCE 06	
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 01 + ZCY 49	ZCP 39 + ZCP EP16 + ZCE 06	
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 01 + ZCY 49	ZCP 37 + ZCP EP16 + ZCE 06	
Weight (kg)	0.130	0.130	0.135	0.145	0.145	0.155	0.085

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

For an entry tapped for a n° 11 cable gland, replace P16 in the reference by G11. Example: XCK P21H0P16 becomes XCK P21H0G11 or ZCP EP16 becomes ZCP EG11.

Contact operation: closed, open. (A) = cam displacement, (P) = positive opening part. NC contact with positive opening operation

Characteristics

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

(1) Form conforming to EN 50047, see page 1/176. (2) Value taken with actuation by moving part at 100 mm from the fixing. (3) Switches with gold contacts or eyelet type connections: please consult our Customer Care Centre.

Limit switches

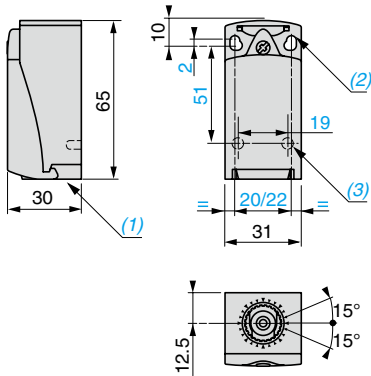
OsiSense XC Standard

Compact design, plastic, type XCK P

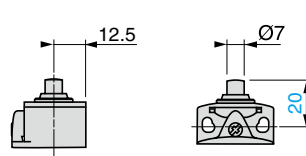
Complete switches with 1 cable entry

1

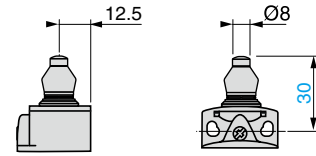
ZCP 2● + ZCP EP16/ZCP 3● + ZCP EP16



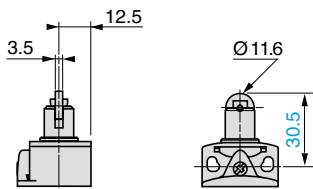
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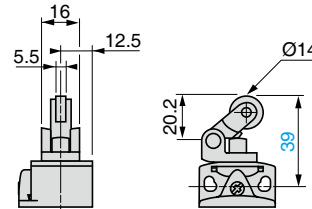
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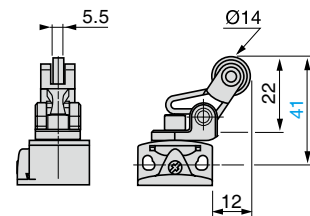
ZCE 02



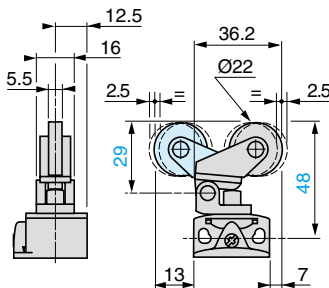
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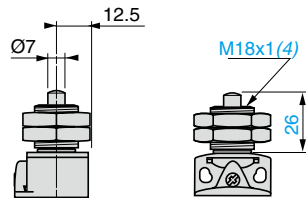
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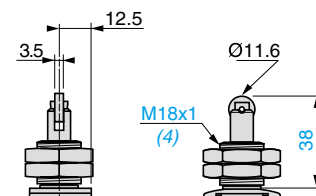
ZCE 28



ZCE H0



ZCE H2



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

Limit switches

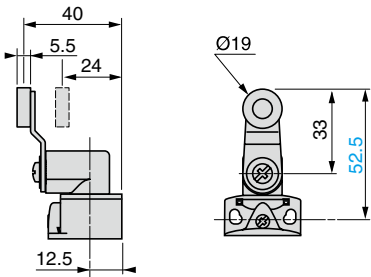
OsiSense XC Standard

Compact design, plastic, type XCK P

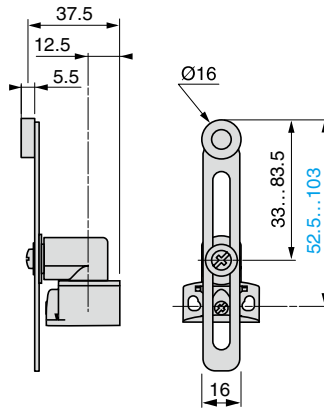
Complete switches with 1 cable entry

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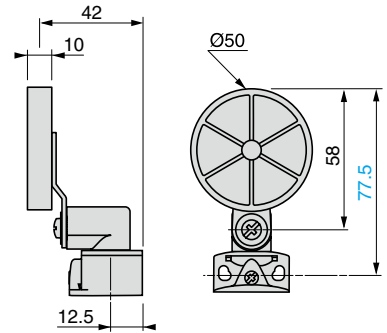
ZCE 01 + ZCY 18



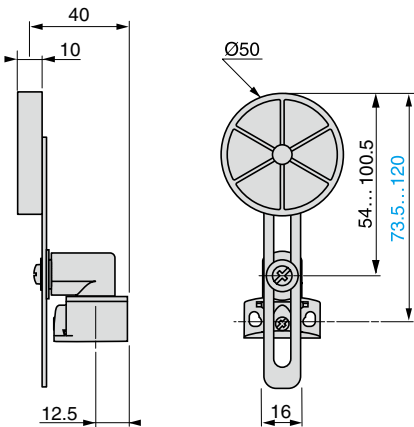
ZCE 01 + ZCY 45



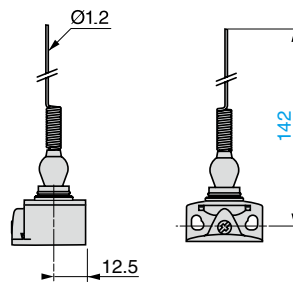
ZCE 01 + ZCY 39



ZCE 01 + ZCY 49



ZCE 06



1

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

References						
2-pole NC + NO snap action (XE2S P2151)	 XCK P2110M12	 XCK P2111M12	 XCK P2102M12	 XCK P2121M12	 XCK P2127M12	 XCK P2128M12
2-pole NC + NC snap action (XE2S P2141)	 ZCP 29M12 + ZCE 10	 ZCP 29M12 + ZCE 11	 ZCP 29M12 + ZCE 02	 ZCP 29M12 + ZCE 21	 ZCP 29M12 + ZCE 27	 ZCP 29M12 + ZCE 28
Weight (kg)	0.100	0.100	0.100	0.110	0.110	0.110
Contact operation	closed open		(A) (B) = cam displacement (P) = positive opening point		NC contact with positive opening operation	

(1) Form conforming to EN 50047, see page 1/176. (2) Nitrile for indoor use.

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

Connections

M12 connector	
	XE2S P2151 1-2: NC 3-4: NO XE2S P2141 1-2: NC 3-4: NC

See connection on page 9/44




Dimensions

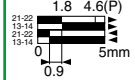
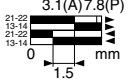
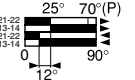
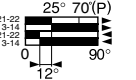
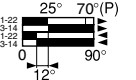
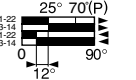
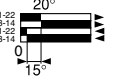
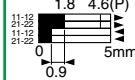
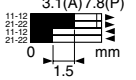
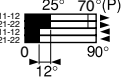
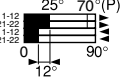
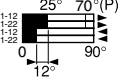
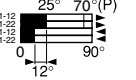
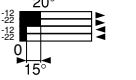



ZCP 2•M12	ZCE 10	ZCE 11	ZCE 02	ZCE 21






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

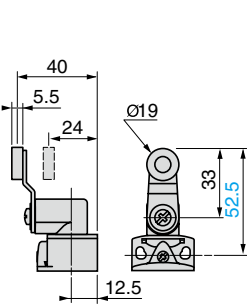
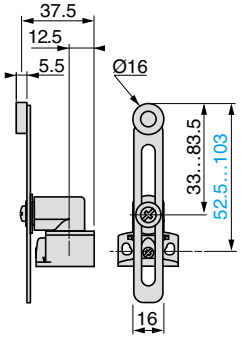
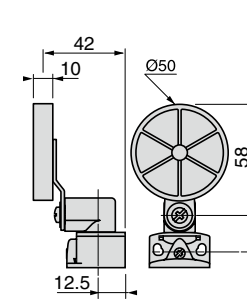
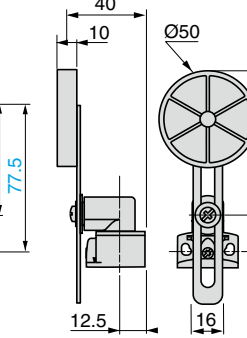
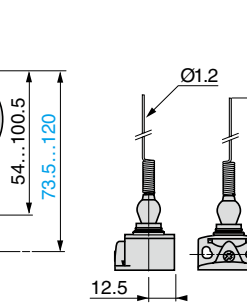
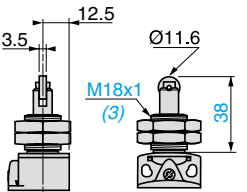
References, characteristics, dimensions

Compact design OsiSense XC Standard Compact design, plastic, type XCK P M12 connector

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

References							
2-pole NC + NO snap action (XE2S P2151)							
	XCK P21H0M12	XCK P21H2M12	XCK P2118M12	XCK P2145M12	XCK P2139M12	XCK P2149M12	XCK P2106M12
2-pole NC + NC snap action (XE2S P2141)							
	ZCP 29M12 + ZCE H0	ZCP 29M12 + ZCE H2	ZCP 29M12 + ZCE 01 + ZCY 18	ZCP 29M12 + ZCE 01 + ZCY 45	ZCP 29M12 + ZCE 01 + ZCY 39	ZCP 29M12 + ZCE 01 + ZCY 49	ZCP 29M12 + ZCE 06
Weight (kg)	0.140	0.140	0.140	0.150	0.155	0.160	0.090
Contact operation	 closed  open		(A) = cam displacement (P) = positive opening point		 NC contact with positive opening operation		
(1) Form conforming to EN 50047, see page 1/176. (2) Value taken with actuation by moving part at 100 mm from the fixing.							

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

Dimensions				
ZCE 01 + ZCY 18	ZCE 01 + ZCY 45	ZCE 01 + ZCY 59	ZCE 01 + ZCY 49	ZCE 06
				
ZCE H2				
(3) Fixing nut thickness 3.5 mm.				

Limit switches

OsiSense XC Standard

Compact design, plastic, types XCK P and XCK T

Compact design, metal, type XCK D

1

■ 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



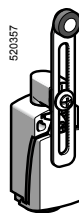
Pages 1/38 and 1/42

Pages 1/32 and 1/36

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

XCK D

XCK P



Pages 1/39 and 1/43

Pages 1/33 and 1/37

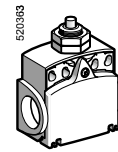
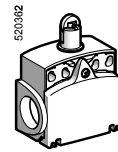
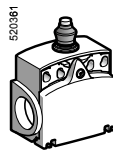
■ XCK T

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

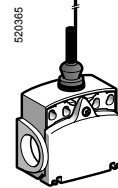
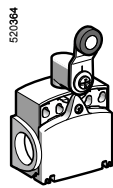
XCK T



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

XCK T



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Environment characteristics

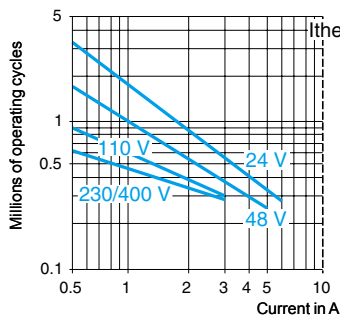
Conformity to standards	Products	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications		UL, CSA, CCC
Protective treatment	Standard version	"TC"
Ambient air temperature	For operation	- 25...+ 70°C
	For storage	- 40...+ 70°C
Vibration resistance	Conforming to IEC 60068-2-6	25 gn (10...500 Hz) except product with head ZCE 24: 20 gn
Shock resistance	Conforming to IEC 60068-2-27	50 gn (11 ms) except head 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 connector	Depending on model	Either tapped entry for n° 11 or n° 13 cable gland, tapped ISO M16 x 1.5 or ISO M20 x 1.5, tapped 1/2" NPT or PF 1/2 (G1/2) or M12 connector
Materials		XCK D zamak bodies and heads, XCK P and XCK T plastic bodies, zamak heads

Contact block characteristics

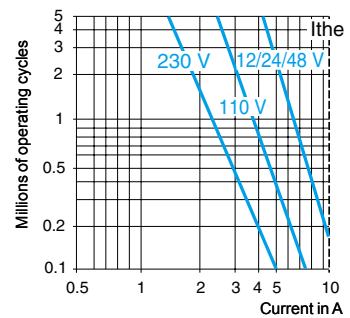
Rated operational characteristics	XE2● P	~AC-15; A300 (Ue = 240 V, Ie = 3 A); Ithe = 10 A ---DC-13; Q300 (Ue = 250 V, Ie = 0.27 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	XE3● P	~AC-15; B300 (Ue = 240 V, Ie = 1.5 A); Ithe = 6 A ---DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
Rated insulation voltage	XE2● P	Ui = 500 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
	XE3● P	Ui = 400 V degree of pollution 3 conforming to IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	XE2● P	U imp = 6 kV conforming to IEC 60947-1, IEC 60664
	XE3● P	U imp = 4 kV conforming to IEC 60947-1, IEC 60664
Positive operation (depending on model)		NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1
Resistance across terminals		≤ 25 mΩ conforming to IEC 60255-7 category 3
Short-circuit protection	XE2● P	10 A cartridge fuse type gG (gl)
	XE3● P	6 A cartridge fuse type gG (gl)
Connection (screw clamp terminals)	XE2S P●151 and XE2S P2141	Clamping capacity, min: 1 x 0.34 mm ² , max: 2 x 1.5 mm ²
	XE2N P21●1 and XE2N P31●1	Clamping capacity, min: 1 x 0.5 mm ² , max: 2 x 2.5 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 (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		<ul style="list-style-type: none"> ■ Conforming to IEC 60947-5-1 Appendix C ■ Utilisation categories AC-15 and DC-13 ■ Maximum operating rate: 3600 operating cycles/hour ■ Load factor: 0.5

AC supply
50/60 Hz ~
mm. inductive circuit

XE2S P●151, XE2S P2141



XE2N P21●1, XE2N P31●1



DC supply ---

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	10	7	4

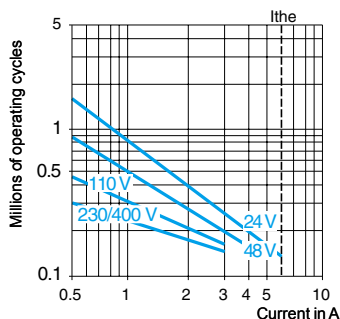
Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	13	9	7

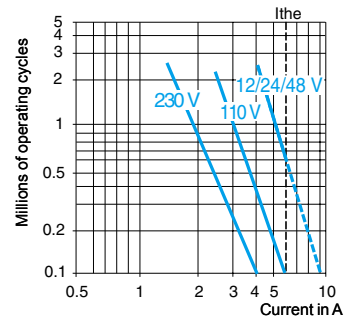
For XE2S P●151 on ~ or ---, NC and NO contacts simultaneously loaded to the values shown with reverse polarity.

AC supply
50/60 Hz ~
mm. inductive circuit

XE3S P●●●●



XE3N P●●●●



DC supply ---

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	3	2	1

Power broken in W for 5 million operating cycles.

Voltage	V	24	48	120
mm	W	4	3	2