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# Limit switches XCE and XCJ ranges Easy Series

## Catalogue



Simply easy!™



# Limit switches XCE and XCJ ranges

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# Limit switches

## XC range

### General

#### 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,
- passage,
- positioning,
- end of travel.

#### Simple to install switches, offering many 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,
- high repeat accuracy, up to 0.01 mm on the tripping points,
- simple visible operation.

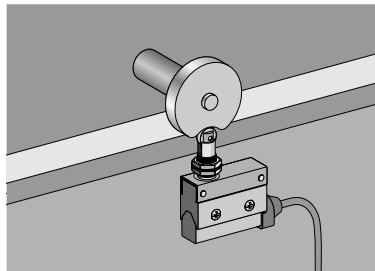
#### Mechanical endurance

##### ■ Major factors affecting the mechanical endurance of a limit switch:

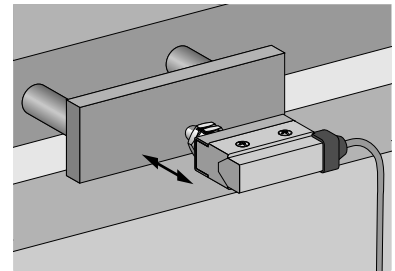
- operating speed and frequency,
- operating travel (percentage of total travel),
- cam angle,
- environment (presence of abrasive dust, corrosive substances, etc).

### Applications examples

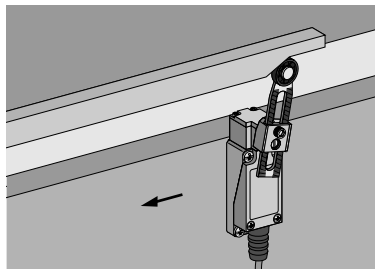
Roller plunger



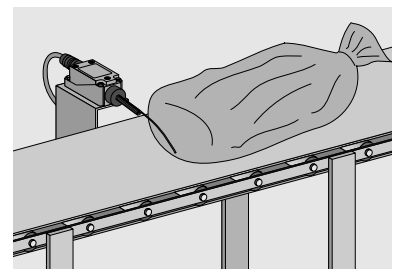
End plunger



Rotary style head

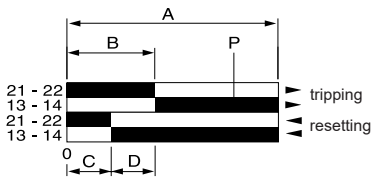


Multidirectional head

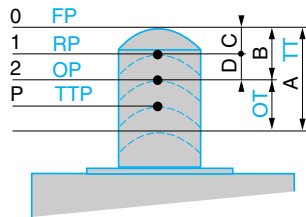


#### Contact blocks operation

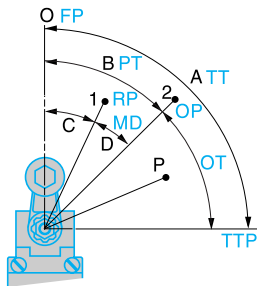
Example : 1 N/C + 1 N/O



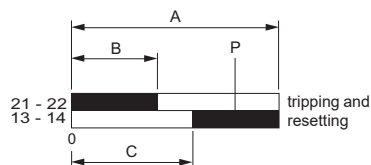
Linear movement (plunger)



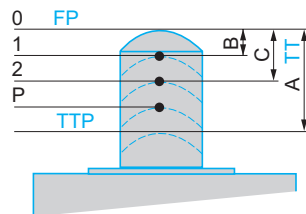
Rotary movement



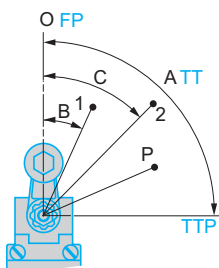
Example : 1 N/C + 1 N/O break before make



Linear movement (plunger)



Rotary movement



#### Snap action contacts

##### Linear movement (plunger)

European terminology	Terminology according to JIS C 4508
A Maximum travel	TT Total travel
B Tripping travel	-
C Resetting travel	-
D Differential travel	-
P Point from which positive opening is assured	-
A-B No specific term	OT Over Travel
1 Resetting point	RP Release Position
2 Tripping point	OP Operation Position
0 No specific term	FP Free Position
- No specific term	TTP Total Travel Position

##### Rotary movement

European terminology	Terminology according to JIS C 4508
A Maximum travel	TT Total travel
B Tripping travel	PT Pre-Travel
C Resetting travel	-
D Differential travel	MD Movement Differential
P Point from which positive opening is assured	-
A-B No specific term	OT Over Travel
1 Resetting point	RP Release Position
2 Tripping point	OP Operation Position
0 No specific term	FP Free Position
- No specific term	TTP Total Travel Position

#### Slow break contacts

##### Linear movement (plunger)

European terminology	Terminology according to JIS C 4508
A Maximum travel	TT Total travel
B Tripping and Resetting travel of N/C contact	-
C Tripping and Resetting travel of N/O contact	-
P Point from which positive opening is assured	-
1 Tripping and Resetting point of N/C contact	-
2 Tripping and Resetting point of N/O contact	-
0 No specific term	FP Free Position
- No specific term	TTP Total Travel Position

##### Rotary movement

European terminology	Terminology according to JIS C 4508
A Maximum travel	TT Total travel
B Tripping and Resetting travel of N/C contact	-
C Tripping and Resetting travel of N/O contact	-
P Point from which positive opening is assured	-
1 Tripping and Resetting point of N/C contact	-
2 Tripping and Resetting point of N/O contact	-
0 No specific term	FP Free Position
- No specific term	TTP Total Travel Position

# Limit switches

## XC range

### Contact ratings

#### Utilization categories IEC 60947-5-1

Kind of current	Category	Typical application	$T_{0.95}$ (DC) (1) COS $\varphi$ (AC)
<b>Alternating current</b>	AC-12	Control of resistive loads and solid state loads with isolation by opto couplers	0.9
	AC-13	Control of solid state loads with transformer isolation	0.65
	AC-14	Control of small electromagnetic loads ( $\leq 72$ VA)	0.3
	AC-15	Control of electromagnetic loads ( $> 72$ VA)	0.3
<b>Direct current</b>	DC-12	Control of resistive loads and solid state loads with isolation by opto couplers	1 ms
	DC-13	Control of electromagnets	300 ms maximum
	DC-14	Control of electromagnetic loads having economy resistors in circuit	15 ms

(1)  $T_{0.95}$  = time to reach 95 % of the steady state current.

#### Contact rating designation IEC 60947-5-1

Designation	Utilization category	Conventional therm. current	Rated operational current $I_e$ at rated operating voltage $U_e$					
			120 V	240 V	380 V	480 V	500 V	600 V
A150	AC-15	10 A	6 A	–	–	–	–	–
A300	AC-15	10 A	6 A	3 A	–	–	–	–
A600	AC-15	10 A	6 A	3 A	1.9 A	1.5 A	1.4 A	1.2 A
B150	AC-15	5 A	3 A	–	–	–	–	–
B300	AC-15	5 A	3 A	1.5 A	–	–	–	–
B600	AC-15	5 A	3 A	1.5 A	0.95 A	0.75 A	0.72 A	0.6 A
C150	AC-15	2.5 A	1.5 A	–	–	–	–	–
C300	AC-15	2.5 A	1.5 A	0.75 A	–	–	–	–
C600	AC-15	2.5 A	1.5 A	0.75 A	0.47 A	0.375 A	0.35 A	0.3 A
D150	AC-14	1.0 A	0.6 A	–	–	–	–	–
D300	AC-14	1.0 A	0.6 A	0.3 A	–	–	–	–
E150	AC-14	0.5 A	0.3 A	–	–	–	–	–

Designation	Utilization category	Conventional therm. current	Rated operational current $I_e$ at rated operating voltage $U_e$				
			125 V	250 V	440 V	500 V	600 V
N150	DC-13	10 A	2.2 A	–	–	–	–
N300	DC-13	10 A	2.2 A	1.1 A	–	–	–
N600	DC-13	10 A	2.2 A	1.1 A	0.63 A	0.55 A	0.4 A
P150	DC-13	5 A	1.1 A	–	–	–	–
P300	DC-13	5 A	1.1 A	0.55 A	–	–	–
P600	DC-13	5 A	1.1 A	0.55 A	0.31 A	0.27 A	0.2 A
Q150	DC-13	2.5 A	0.55 A	–	–	–	–
Q300	DC-13	2.5 A	0.55 A	0.27 A	–	–	–
Q600	DC-13	2.5 A	0.55 A	0.27 A	0.15 A	0.13 A	0.1 A
R150	DC-13	1.0 A	0.22 A	–	–	–	–
R300	DC-13	1.0 A	0.22 A	0.1 A	–	–	–

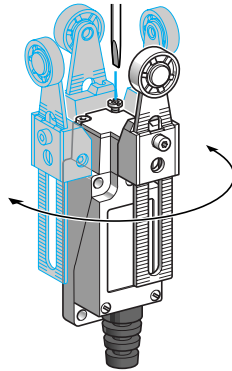
# Limit switches

XC range

Setting up and mounting advice

## Setting up

### Reverse mounting of the operating lever (for limit switches XCE)

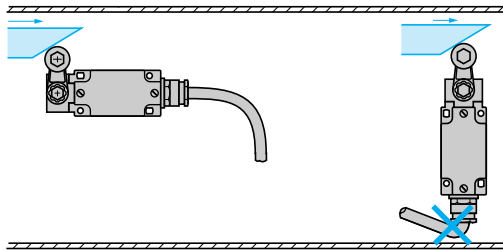


## Mounting advice

### Sweep of connecting cable

Recommended

To be avoided



### Position of cable-gland

Recommended

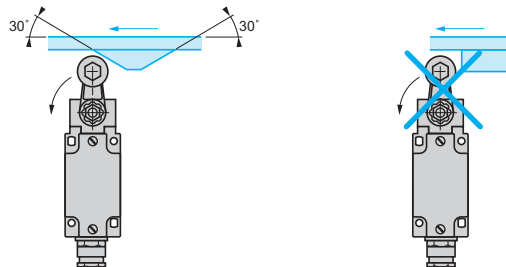
To be avoided



### Type of cam

Recommended

To be avoided



### Mounting and fixing of limit switches

XCJ110C, XCJ102C and XCJ103C

Recommended

To be avoided



# Limit switches

## XC range

### Degrees of protection provided by enclosures

#### European standards

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


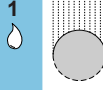
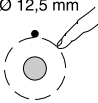
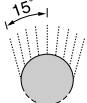
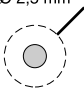
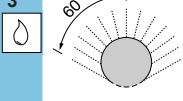
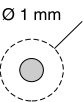
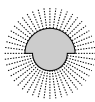
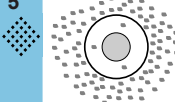
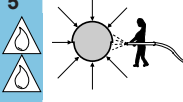
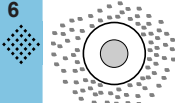
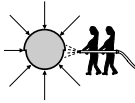
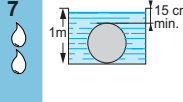
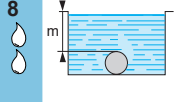
The European standard EN 60529 dated October 1991, IEC publication 529 (2nd edition - November 1989), defines a coding system (IP code) for indicating the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water. This standard does not apply to protection against the risk of explosion or conditions such as humidity, corrosive gasses, fungi or vermin.

#### IP●● code

- The IP code comprises 2 characteristic numerals (e.g. IP 55)
- Any characteristic numeral which is unspecified is replaced by an X (e.g. IP XX)

**1<sup>st</sup> characteristic numeral:** corresponds to protection of the equipment against penetration of solid objects and protection of personnel against direct contact with live parts.

**2<sup>nd</sup> characteristic numeral:** corresponds to protection of the equipment against penetration of water with harmful effects.

	Protection of the equipment		Protection of personnel		Protection of the equipment	
	Protection of the equipment		Protection of personnel		Protection of the equipment	
<b>0</b>	Non-protected		Non-protected	<b>0</b>	Non-protected	
<b>1</b>	 <p>Ø 50 mm</p> <p>Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm.</p>	Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm.	Protected against direct contact with the back of the hand (accidental contacts).	<b>1</b>	 <p>Protected against vertical dripping water, (condensation)</p>	Protected against vertical dripping water, (condensation)
<b>2</b>	 <p>Ø 12,5 mm</p> <p>Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm.</p>	Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm.	Protected against direct finger contact.	<b>2</b>	 <p>15°</p> <p>Protected against dripping water at an angle of up to 15°.</p>	Protected against dripping water at an angle of up to 15°.
<b>3</b>	 <p>Ø 2,5 mm</p> <p>Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.</p>	Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm.	Protected against direct contact with a Ø 2.5 mm tool.	<b>3</b>	 <p>60°</p> <p>Protected against rain at an angle of up to 60°.</p>	Protected against rain at an angle of up to 60°.
<b>4</b>	 <p>Ø 1 mm</p> <p>Protected against the penetration of solid objects having a diameter &gt; 1 mm.</p>	Protected against the penetration of solid objects having a diameter > 1 mm.	Protected against direct contact with a Ø 1 mm wire.	<b>4</b>	 <p>Protected against splashing water in all directions.</p>	Protected against splashing water in all directions.
<b>5</b>	 <p>Dust protected (no harmful deposits).</p>	Dust protected (no harmful deposits).	Protected against direct contact with a Ø 1 mm wire.	<b>5</b>	 <p>Protected against water jets in all directions.</p>	Protected against water jets in all directions.
<b>6</b>	 <p>Dust tight.</p>	Dust tight.	Protected against direct contact with a Ø 1 mm wire.	<b>6</b>	 <p>Protected against powerful jets of water and waves.</p>	Protected against powerful jets of water and waves.
				<b>7</b>	 <p>1m 15 cm 1min.</p> <p>Protected against the effects of temporary immersion.</p>	Protected against the effects of temporary immersion.
				<b>8</b>	 <p>m</p> <p>Protected against the effects of prolonged immersion under specified conditions.</p>	Protected against the effects of prolonged immersion under specified conditions.



# Limit switches

## XC range

### Degrees of protection provided by enclosures

**American standards**

Standard UL 50 - Table 6.1 - Enclosures types, defines a coding system for indicating the protection provided by electrical equipment enclosures against the ingress of solid foreign objects and fluids.

Type	Intended use and description
<b>1</b>	Indoor use primarily to provide a degree of protection against limited amounts of falling dirt.
<b>2</b>	Indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.
<b>3</b>	Outdoor use primarily to provide a degree of protection against rain, sleet, wind blown dust and damage from external ice formation.
<b>3R</b>	Outdoor use primarily to provide a degree of protection against rain, sleet, and damage from external ice formation.
<b>3S</b>	Outdoor use primarily to provide a degree of protection against rain, sleet, wind blown dust and provide for operation of external mechanisms when ice laden.
<b>4</b>	Indoor or outdoor use primarily to provide a degree of protection against rain, sleet, wind blown dust and provide for operation of external mechanisms when ice laden.
<b>4X</b>	Indoor or outdoor use primarily to provide a degree of protection against corrosion, wind blown dust and rain, splashing water, hose-directed water, and damage from external ice formation.
<b>5</b>	Indoor use primarily to provide a degree of protection against setting airborne dust, falling dirt, and dripping noncorrosive liquids.
<b>6</b>	Indoor or outdoor use primarily to provide a degree of protection against hose-directed water, and the entry of water during occasional temporary submersion at a limited depth and damage from external ice formation.
<b>6P</b>	Indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during prolonged submersion at a limited depth and damage from external ice formation.
<b>12, 12K</b>	Indoor use primarily to provide a degree of protection against limited circulation dust, falling dirt, and dripping noncorrosive liquids.
<b>13</b>	Indoor use primarily to provide a degree of protection against dust, spraying of water, oil and noncorrosive coolant.





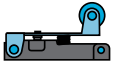

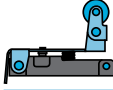




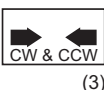

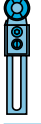
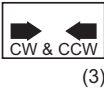


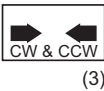

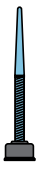
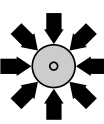


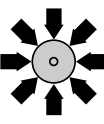

# Limit switches

XC range

Operating heads

## Operating heads selection

### 5 points to consider...

	Direction of operation	Operating speed (1)	Positivity (2)	Risk of overtravel damage	Target type
<b>Plunger style</b>					
	↓	0.5 m/s	Yes	Very high	
	↔	0.85 m/s	Yes	High	
<b>Lever and roller lever plunger style</b>					
	→	0.85 m/s	Yes	Medium	
	→	0.85 m/s	Yes	Medium	
	→ or ↓	0.5 m/s	No	High	
<b>Rotary style</b>					
		1 m/s	Yes (with non flexible levers only)	Low	
		1 m/s	Yes (with non flexible levers only)	Low	
		1 m/s	Yes (with non flexible levers only)	Low	
<b>Multidirectional style</b>					
		0.5...1 m/s	No	Lowest	
		0.5...1 m/s	No	Lowest	

(1) These values are indicative only. For precise information relating to a particular device, refer to the appropriate technical characteristics.  
 (2) Only when combined with a positive opening contact.  
 (3) CW = clockwise, CCW = counter clockwise.

**Applications**

**Medium duty:**  
small compactors, wood working, metal working, food processing...

**Light duty:**  
injection moulding, assembly, metal working, packaging...



<b>Enclosure (body)</b>	Zinc alloy (cover: plastic)
<b>Conforming to standards</b>	IEC 60947-5-1
<b>Conformities</b>	CE, CCC
<b>Body dimensions</b> in mm (w x h x d)	28 x 64 x 25
<b>Head</b>	Linear, rotary or multi-directional
<b>Contact blocks</b>	1 C/O snap action - Form C 1 NO + 1NC snap action - Form Za
<b>Degree of protection</b>	IP 65
<b>Cabling</b>	Screw terminal Pre-cabled Connector
<b>Type references</b>	<b>XCE</b>
<b>Pages</b>	10 to 15

<b>Enclosure (body)</b>	Plastic (cover: zinc alloy)
<b>Conforming to standards</b>	IEC 60947-5-1
<b>Conformities</b>	CE, CCC
<b>Body dimensions</b> in mm (w x h x d)	54 x 42 x 21
<b>Head</b>	Linear
<b>Contact blocks</b>	•
<b>Degree of protection</b>	IP 40, IK 04
<b>Cabling</b>	Flexible rubber cable gland suitable for cable Ø 6...9 mm
<b>Type references</b>	<b>XCJ</b>
<b>Pages</b>	16 to 19

<b>Enclosure (body)</b>	Plastic (cover: zinc alloy)
<b>Conforming to standards</b>	IEC 60947-5-1
<b>Conformities</b>	CE, CCC
<b>Body dimensions</b> in mm (w x h x d)	54 x 42 x 21
<b>Head</b>	Linear
<b>Contact blocks</b>	•
<b>Degree of protection</b>	IP 40, IK 04
<b>Cabling</b>	Flexible rubber cable gland suitable for cable Ø 8.5...10.5 mm
<b>Type references</b>	<b>XCJ</b>
<b>Pages</b>	16 to 19

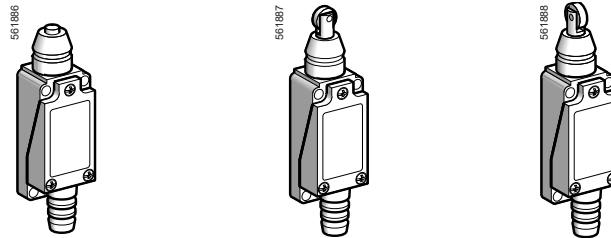
# Limit switches

XC range

For medium duty applications, XCE

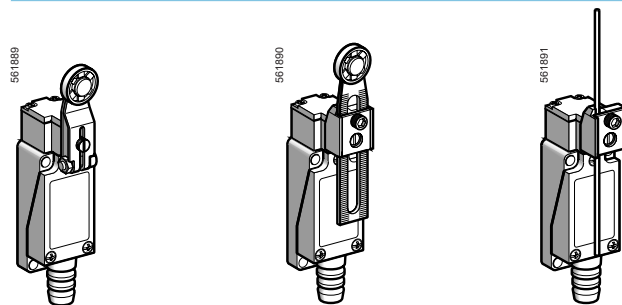
## XCE (1 NO + 1 NC form Za)

### With head for linear movement (plunger) operators



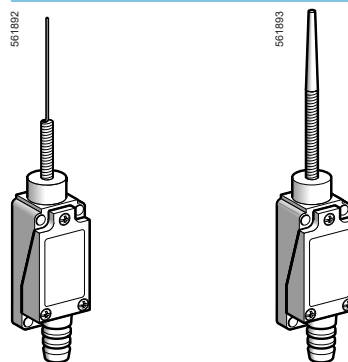
Page 11

### With head for rotary movement (lever) operators



Page 12

### With head for multi-directional operators



Page 13

## Environment

Conforming to standards	IEC 60947-5-1
Certifications	CE, CCC
Ambient air temperature	For operation : - 25...+ 70 °C, for storage: -40...+ 70 °C
Vibration resistance	Conforming to IEC 60068-2-6 10...55 Hz, 3 mm double amplitude
Shock resistance	Conforming to IEC 60068-2-27 30 gn, 11 ms, in the free position
Degree of protection	Conforming to IEC 60529 <b>IP 65</b>
Materials	Body and head: metal, cover: plastic
Mechanical durability	<b>10 x 10<sup>6</sup> operations</b>
Cable entry	Flexible rubber cable gland suitable for cable Ø 6...9 mm
Tightening torques	Body (M4 screws) 2.4...3.0 N.m / 21.24...26.55 lb-in
	Cover 0.5...0.6 N.m / 4.42...5.31 lb-in
	Head (rotary type) 0.3...0.4 N.m / 2.65...3.54 lb-in
	Roller lever (rotary type) 2.4...3.0 N.m / 21.24...26.55 lb-in

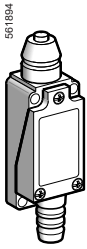


## Contact block characteristics

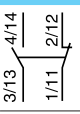
Rated operational characteristics	~ AC (Ue = 240 V, Ie = 3 A, Ith = 10 A); --- DC (Ue = 220 V, Ie = 0.3 A)
Rated insulation voltage	Ui=300V, pollution degree 3 complies with IEC 60947
Insulation resistance	> 100 mΩ at 500 V
Operating frequency	120 operations per minute
Electrical endurance	8 x 10 <sup>5</sup> operations
Contact resistance	≤ 25 mΩ
Cabling	Screw terminals, torque range 0.6...1.1 N.m / 5.31...8.85 lb-in Maximum clamping capacity 0.75...1.5 mm <sup>2</sup> per terminal

# Limit switches

XC range

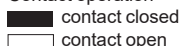
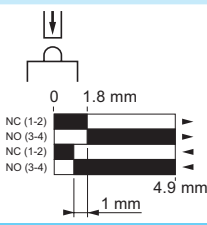
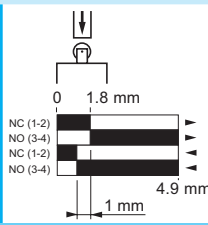
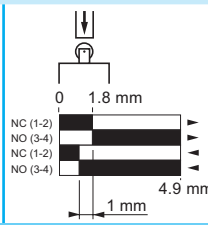
For medium duty applications, XCE

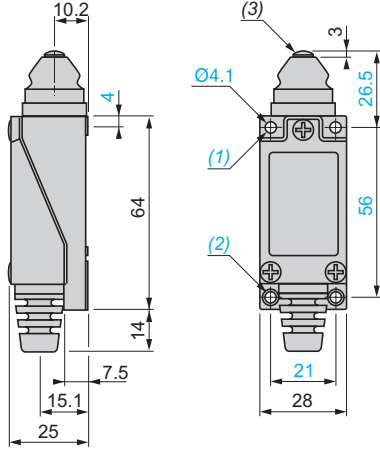
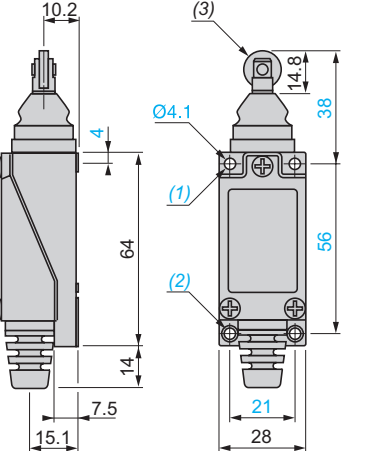
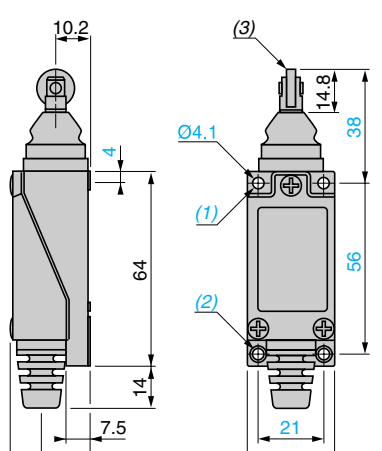
Type of operating head			
Plunger			
			
Type of operator	Steel end plunger	Steel roller plunger for lateral cam movement	Steel roller plunger for traverse cam movement

References (1)			
1 NO + 1 NC (form Za)		XCE110C	XCE102C
Weight (kg)		0.110	0.126

(1) All products are supplied in individual packaging. They are also available in a bulk pack of 10 products. To order the bulk packed versions, add the suffix **TQ** at the end of product reference. Example **XCE110CTQ**. Obviously the indivisible order quantity for this version is 10.

Complementary characteristics not shown under general characteristics (page 10)	
Switch actuation	On end
Operating force (maxi.)	9 N
Release force (mini.)	1.5 N
Operating frequency	120 operations per minute
Maximum actuation speed	0.5 m/s
Minimum actuation speed	5 mm/s
Mechanical durability	10 x 10 <sup>6</sup> operations (For XCE102C and XCE103C, actuation by 30° cam: 1 million operations)
Cabling	Flexible rubber cable gland suitable for cable Ø 6...9 mm

Operating diagrams			
Type of actuation			
Operating diagrams			
Contact operation			
			
			

Dimensions in mm			
XCE110C	XCE102C	XCE103C	
			

- (1) 2 holes M5 tapped 7 in depth.
  - (2) 2 M5 tapped holes.
  - (3) Stainless steel plunger Ø 7.
- (1) 2 holes M5 tapped 7 in depth.
  - (2) 2 M5 tapped holes.
  - (3) Stainless steel roller Ø 12.5 x 3.8.
- (1) 2 holes M5 tapped 7 in depth.
  - (2) 2 M5 tapped holes.
  - (3) Stainless steel roller Ø 12.5 x 3.8.

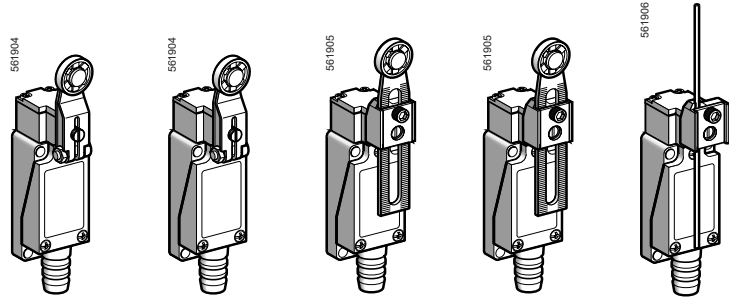
# Limit switches

XC range

For medium duty applications, XCE

Type of operating head

Rotary



Type of operator	Thermoplastic roller lever	Steel roller lever	Variable length thermoplastic roller lever	Variable length steel roller lever	Round rod Ø 3 mm steel rod
<b>References (1)</b>					
1 NO + 1 NC (form Za)	XCE118C	XCE119C	XCE145C	XCE146C	XCE154C
Weight (kg)	0.152	0.159	0.175	0.181	0.164



**Complementary characteristics** not shown under general characteristics (page 10)

Switch actuation	By 30° cam	By any moving part
Operating force (maxi.)	7.5 N	
Release force (mini.)	0.5 N	
Operating frequency	120 operations per minute	
Maximum actuation speed	1 m/s	
Minimum actuation speed	9 mm/s for rotary type 5 mm/s for multi-directional type	
Mechanical durability	10 x 10 <sup>6</sup> operations	
Cabling	Flexible rubber cable gland suitable for cable Ø 6...9 mm Maximum clamping capacity 0.75...1.5 mm <sup>2</sup> per terminal	

**Operating diagrams**

Type of actuation	1	2	3	4	5
Operating diagrams					
Contact operation	<p>■ contact closed □ contact open</p> <p>NC (1-2) NO (3-4) NC (1-2) NO (3-4)</p>				

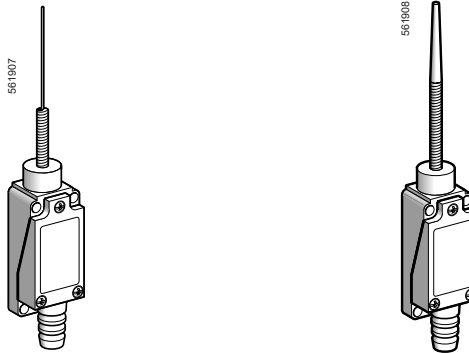
(1) All products are supplied in individual packaging. They are also available in a bulk pack of 10 products. To order the bulk packed versions, add the suffix **TQ** at the end of product reference. Example **XCE118CTQ**. Obviously the indivisible order quantity for this version is 10.

# Limit switches


XC range

For medium duty applications, XCE

**Type of operating head**  
Multi-directional



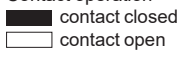
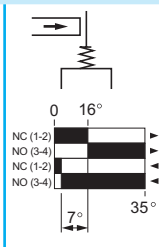
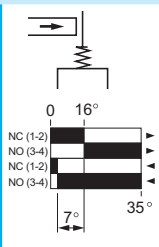
Type of operator	“Cat’s whisker”	Spring rod lever with thermoplastic end
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<b>References (1)</b>		
1 NO + 1 NC (form Za)		XCE106C
Weight (kg)	0.109	XCE181C

**Complementary characteristics** not shown under general characteristics (page 10)

Switch actuation	By any moving part
Operating force (maxi.)	1.5 N
Release force (mini.)	0.04 N
Operating frequency	120 operations per minute
Maximum actuation speed	1 m/s
Mechanical durability	4 x 10 <sup>6</sup> operations
Cabling	Flexible rubber cable gland suitable for cable Ø 6...9 mm Maximum clamping capacity 1.5 mm <sup>2</sup> per terminal

**Operating diagrams**

<b>Type of actuation</b>		
<b>Operating diagrams</b> Contact operation 		

(1) All products are supplied in individual packaging. They are also available in a bulk pack of 10 products. To order the bulk packed versions, add the suffix **TQ** at the end of product reference. Example **XCE181CTQ**. Obviously the indivisible order quantity for this version is 10.

# Limit switches

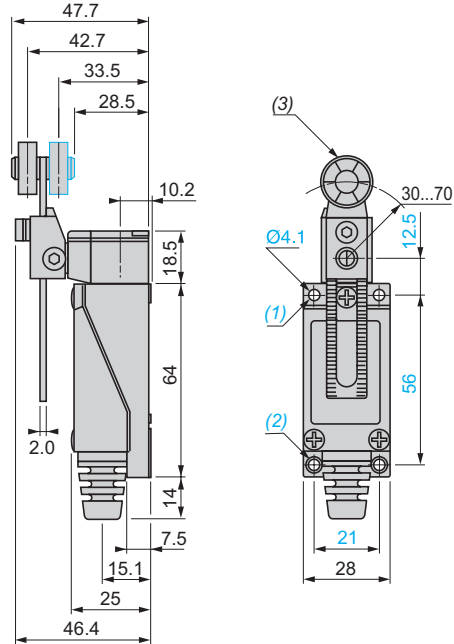
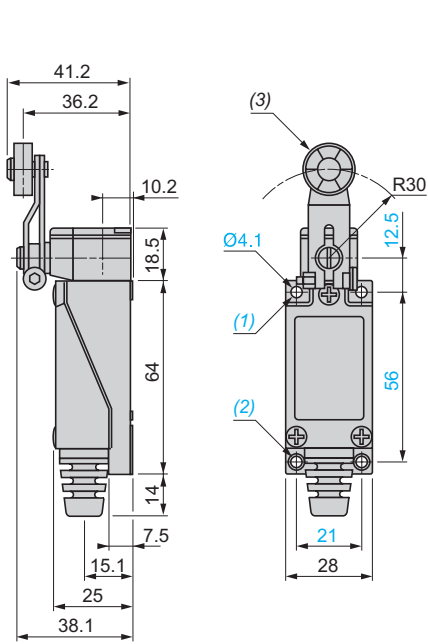
XC range

For medium duty applications, XCE

## Dimensions in mm

XCE118C, XCE119C

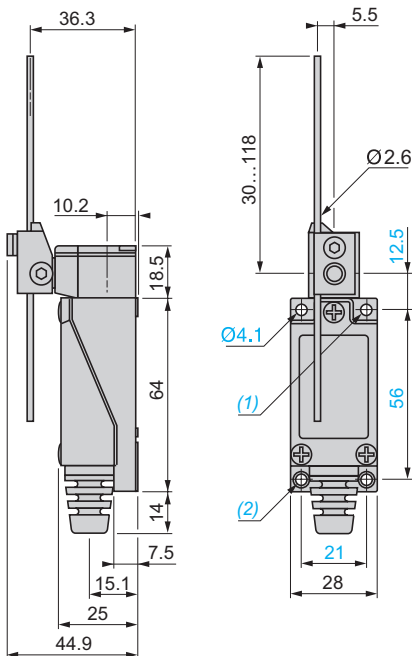
XCE145C, XCE146C



- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.
- (3) Nylon and metal roller Ø 18 x 7 (roller can be rotated and locked in any position through 360°).

- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.
- (3) Nylon and metal roller Ø 18 x 7.

XCE154C



- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.



# Limit switches

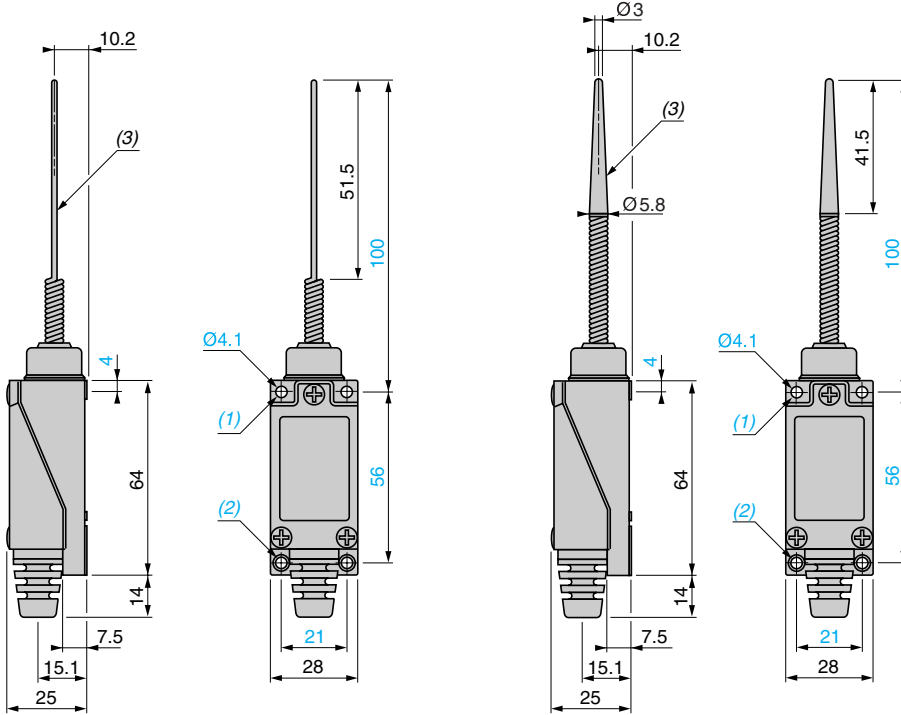
XC range

For medium duty applications, XCE

## Dimensions in mm

XCE106C

XCE181C



- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.
- (3) Stainless steel wire  $\varnothing 1.2$ .

- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.
- (3) Nylon rod.

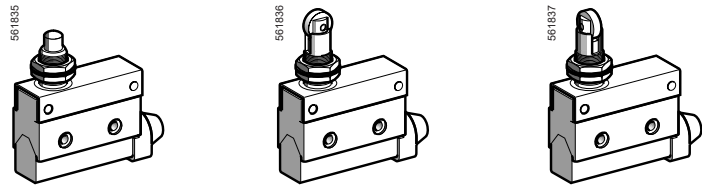
# Limit switches

XC range

For light to medium duty applications, XCJ

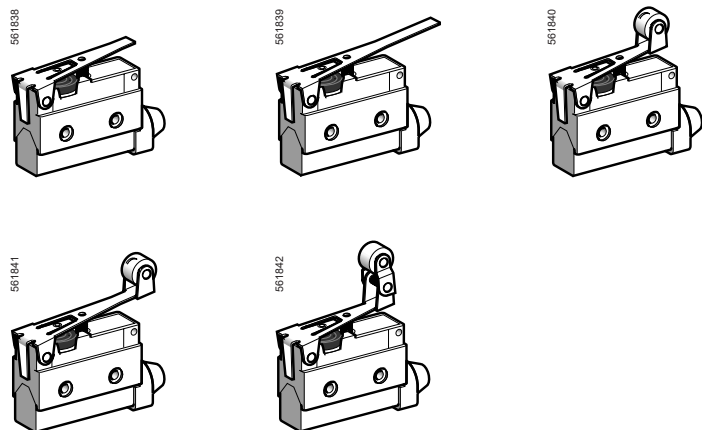
## XCJ (single-pole contact 1 C/O form C)

With head for linear movement (plunger) operators, fixing by head or body



Page 17

With head for linear movement (lever plunger) operators, fixing by body



Page 18

## Environnement

Conforming to standards	IEC 60947-5-1
Certifications	CE, CCC
Ambient air temperature	For operation: -25...+70 °C, for storage: -40...+70 °C
Vibration resistance	Conforming to IEC 60068-2-6 10...55 Hz XCJ110, XCJ102 and XCJ103C: 3.0 mm double amplitude XCJ125, XCJ126 and XCJ127C: 1.5 mm double amplitude XCJ121 and XCJ128C: 0.7 mm double amplitude
Shock resistance	Conforming to IEC 60068-2-27 10 gn, 11 ms, in the free position
Degree of protection	Conforming to IEC 60529 <b>IP 40</b> <b>IK 04</b>
Materials	Body: plastic, head: metal
Mechanical durability	<b>10 x 10<sup>6</sup> operations</b>
Cable entry	Flexible rubber cable gland suitable for cable Ø 8.5...10.5 mm
Head mounting	Torque range for XCE110C, XCJ102C and XCJ103C: 2.9...4.9 N.m / 25.66...43.66 lb-in
Body mounting	Mounting torque range (M4 screws): 1.2...1.5 N.m / 10.62...13.27 N.m

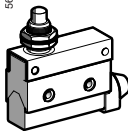
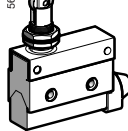
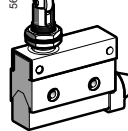

## Contact block characteristics

Rated operational characteristics	~ AC ( $U_e = 240$ V, $I_e = 10$ A), $I_{th} = 10$ A --- DC ( $U_e = 220$ V, $I_e = 0.3$ A)
Insulation resistance	> 100 mΩ at --- 500 V
Dielectric withstand voltage	~ 1000 V, 50/60 Hz for 1 minute between non-continuous terminals ~ 2000 V, 50/60 Hz between current carrying and non-current carrying parts and between each terminal and ground. Double isolation, CE Class II conforming to IEC 60947-5-1
Operating frequency	120 operations per minute
Electrical endurance	> 8 x 10 <sup>5</sup> operations (~ 220 V, 10 A, P.F. = 1)
Contact resistance	≤ 25 mΩ
Cabling	M3.5 screw terminals (use cable lug with flexible cable) Torque range: 0.8...1.2 N.m / 7.08...10.62 lb-in

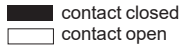
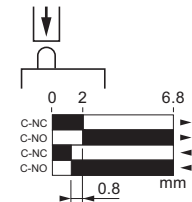
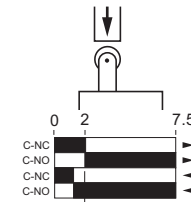
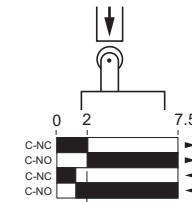
# Limit switches

XC range

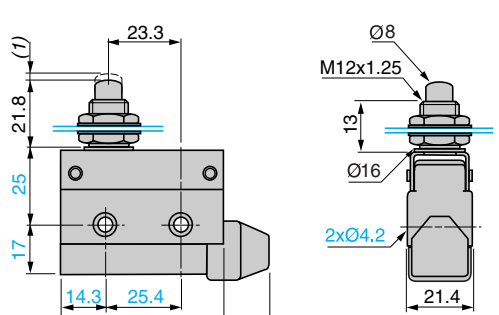
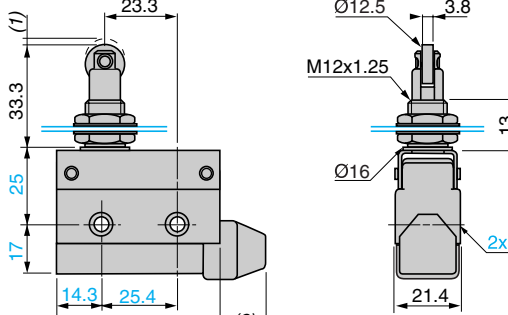
For light to medium duty applications, XCJ

Type of operating head			
	Plunger (fixing by head or body)		
			
Type of operator	Steel end plunger	Steel roller plunger for lateral cam movement	Steel roller plunger for traverse cam movement
References			
Single pole 1 C/O (form C)		XCJ110C	XCJ102C
Weight (kg)	0.081	0.086	0.088
<b>Complementary characteristics</b> not shown under general characteristics (page 16)			
Switch actuation	On end		
Operating force (max.)	4 N		
Release force (min.)	0.98 N		
Operating frequency	120 operations per minute		
Actuation speed	0.01 mm/s...50 cm/s (at pin plunger)		
Mechanical durability	10 x 10 <sup>6</sup> operations (for XCJ102C and XCJ103C, actuation by 30° cam: 4 million operations)		
Cabling	M3.5 screw terminals (use cable lug with flexible cable) Torque range: 0.8...1.2 N.m / 7.08...10.62 lb-in		

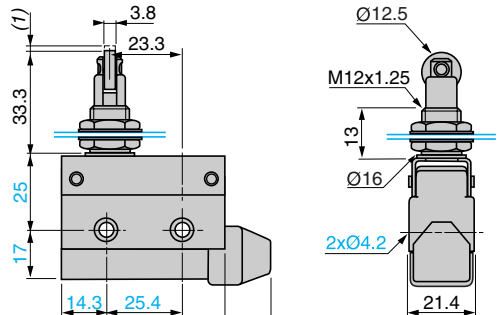
## Operating diagrams

Type of actuation			
Operating diagrams			
Contact operation			
			
			

## Dimensions in mm

XCJ110C	XCJ102C
	

(1) 2 max.  
(2) 16.5 max.

XCJ103C


(1) 2 max.  
(2) 16.5 max.

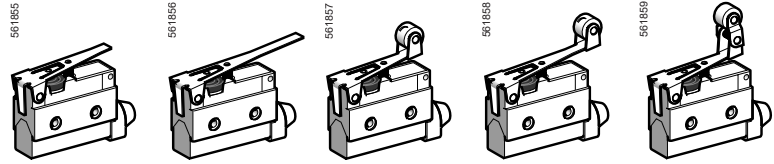
# Limit switches

XC range

For light to medium duty applications, XCJ

## Type of operating head

### Plunger (fixing by body)



## Type of operator

Short flat lever plunger	Long flat lever plunger	Short flat roller lever plunger	Long flat roller lever plunger	Short flat roller lever plunger, one way operation
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## References

Single pole 1 C/O (form C)



XCJ125C	XCJ126C	XCJ127C	XCJ128C	XCJ121C
---------	---------	---------	---------	---------

Weight (kg)

0.052	0.053	0.057	0.057	0.059
-------	-------	-------	-------	-------

## Complementary characteristics not shown under general characteristics (page 16)

Switch actuation

On end	By 30° cam
--------	------------

Operating force (maxi.)

1.9 N	1.3 N	2.3 N	1.6 N	2.4 N
-------	-------	-------	-------	-------

Release force (mini.)

0.59 N	0.39 N	0.78 N	0.49 N	0.98 N
--------	--------	--------	--------	--------

Operating frequency

120 operations per minute

Actuation speed

0.01 mm/s...50 cm/s (at pin plunger)

Mechanical durability

10 x 10<sup>6</sup> operations

Cabling

M3.5 screw terminals (use cable lug with flexible cable)  
Torque range: 0.8...1.2 N.m / 7.08...10.62 lb-in

## Operating diagrams

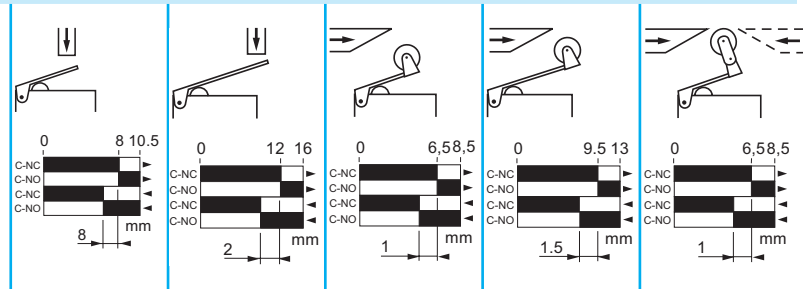
### Type of actuation

Operating diagrams

Contact operation

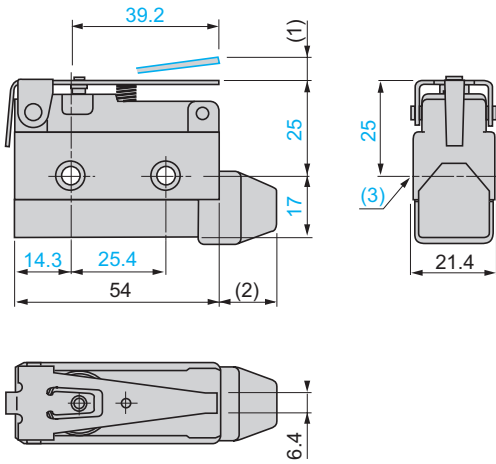
■ contact closed

□ contact open



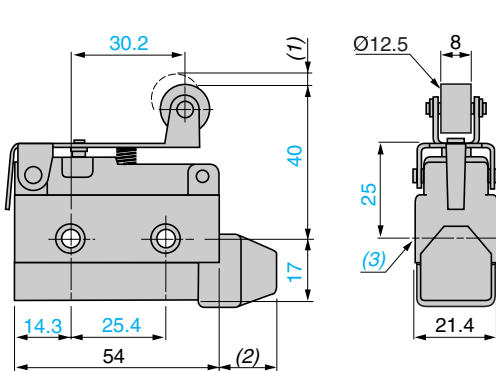
### Dimensions in mm

**XCJ125C**



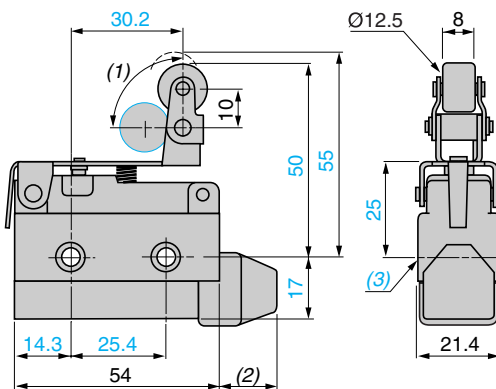
- (1) 8.5 max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

**XCJ127C**



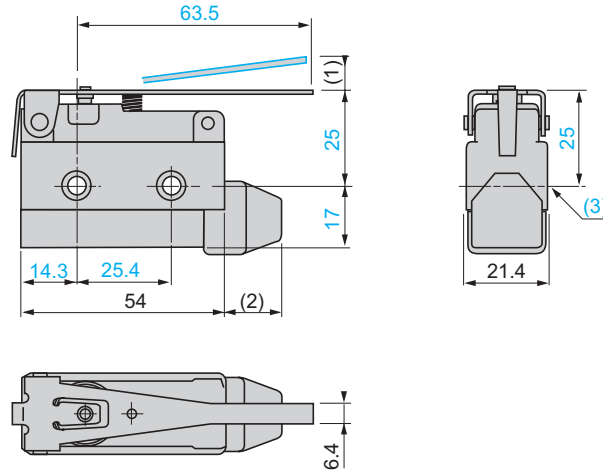
- (1) 6.5 max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

**XCJ121C**



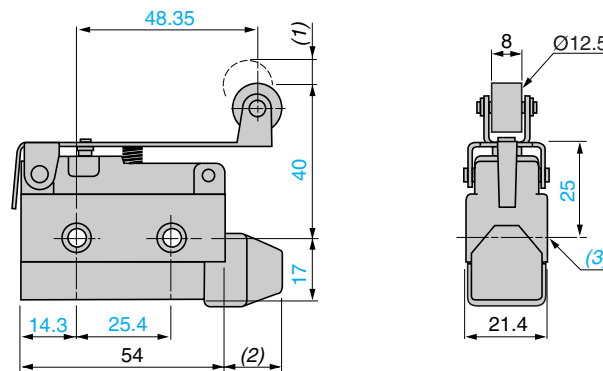
- (1) 90° max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

**XCJ126C**



- (1) 13.5 max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

**XCJ128C**



- (1) 11 max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

---

X	
XCE110C	11
XCE102C	11
XCE103C	11
XCE118C	12
XCE119C	12
XCE145C	12
XCE146C	12
XCE154C	12
XCE106C	13
XCE181C	13
XCJ110C	17
XCJ102C	17
XCJ103C	17
XCJ125C	18
XCJ126C	18
XCJ127C	18
XCJ128C	18
XCJ121C	18



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Photos: Schneider Electric

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