
Limit switches

XCE and XCJ ranges

Basics line

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.

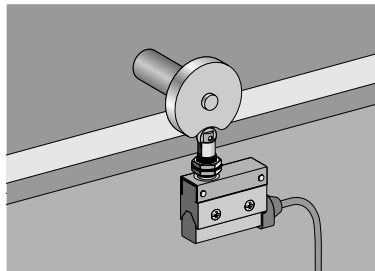
Mechanical endurance

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

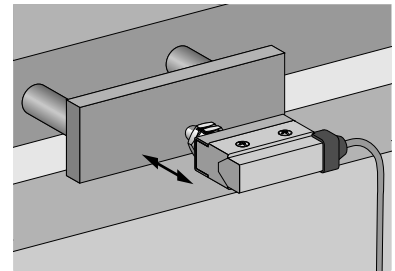
- operating speed and frequency,
- operating travel (percentage of total travel),
- cam angle,
- environment (presence of abrasive dust, corrosive substances, etc).

Applications examples

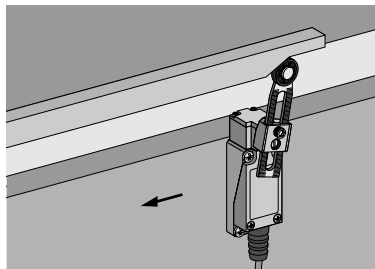
Roller plunger



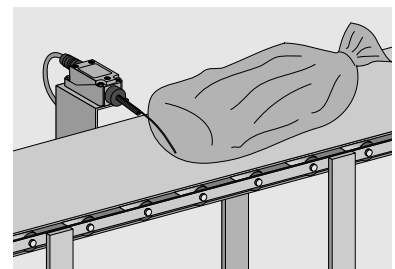
End plunger



Rotary style head



Multidirectional head



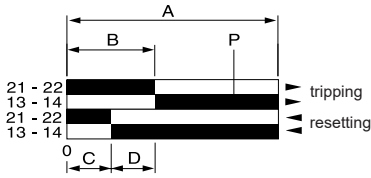
Limit switches

XC range

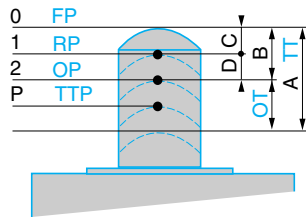
Contact block operation

Contact blocks operation

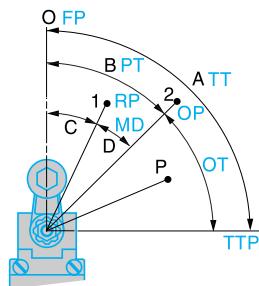
Example : 1 N/C + 1 N/O



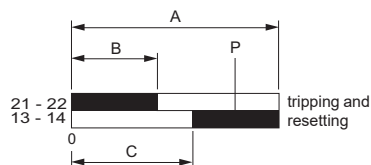
Linear movement (plunger)



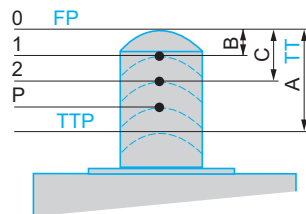
Rotary movement



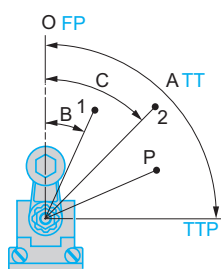
Example : 1 N/C + 1 N/O break before make



Linear movement (plunger)



Rotary movement



Snap action contacts

| 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 |

| 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

| 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 |

| 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 φ (AC) |
|----------------------------|----------|--|-----------------------------------|
| Alternating current | 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 (≤ 72 VA) | 0.3 |
| | AC-15 | Control of electromagnetic loads (> 72 VA) | 0.3 |
| Direct current | 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 | – | – | – |

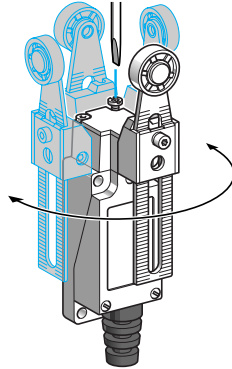
Limit switches

XC range

Setting up and mounting advice

Setting up

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

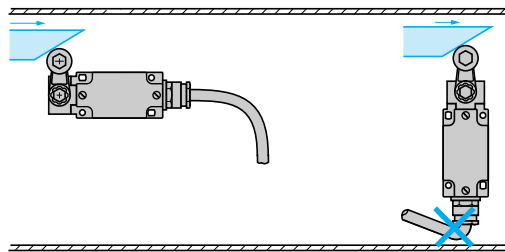


Mounting advice

Sweep of connecting cable

Recommended

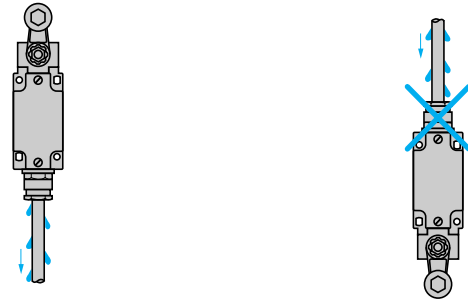
To be avoided



Position of cable-gland

Recommended

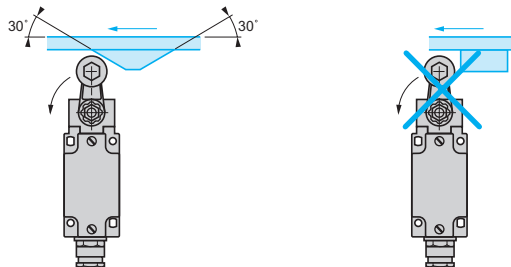
To be avoided



Type of cam

Recommended

To be avoided

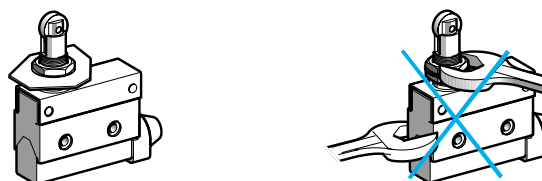


Mounting and fixing of limit switches

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)

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

2nd 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 | |
| 0 | Non-protected | | Non-protected | 0 | Non-protected | |
| 1 | <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). | 1 | <p>Protected against vertical dripping water, (condensation)</p> | Protected against vertical dripping water, (condensation) |
| 2 | <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. | 2 | <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°. |
| 3 | <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. | 3 | <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°. |
| 4 | <p>Ø 1 mm</p> <p>Protected against the penetration of solid objects having a diameter > 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. | 4 | <p>Protected against splashing water in all directions.</p> | Protected against splashing water in all directions. |
| 5 | <p>Dust protected (no harmful deposits).</p> | Dust protected (no harmful deposits). | Protected against direct contact with a Ø 1 mm wire. | 5 | <p>Protected against water jets in all directions.</p> | Protected against water jets in all directions. |
| 6 | <p>Dust tight.</p> | Dust tight. | Protected against direct contact with a Ø 1 mm wire. | 6 | <p>Protected against powerful jets of water and waves.</p> | Protected against powerful jets of water and waves. |
| | | | | 7 | <p>1m 15 cm 1min.</p> <p>Protected against the effects of temporary immersion.</p> | Protected against the effects of temporary immersion. |
| | | | | 8 | <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 |
|----------------|---|
| 1 | Indoor use primarily to provide a degree of protection against limited amounts of falling dirt. |
| 2 | Indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt. |
| 3 | Outdoor use primarily to provide a degree of protection against rain, sleet, wind blown dust and damage from external ice formation. |
| 3R | Outdoor use primarily to provide a degree of protection against rain, sleet, and damage from external ice formation. |
| 3S | 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. |
| 4 | 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. |
| 4X | 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. |
| 5 | Indoor use primarily to provide a degree of protection against settling airborne dust, falling dirt, and dripping noncorrosive liquids. |
| 6 | 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. |
| 6P | 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. |
| 12, 12K | Indoor use primarily to provide a degree of protection against limited circulation dust, falling dirt, and dripping noncorrosive liquids. |
| 13 | Indoor use primarily to provide a degree of protection against dust, spraying of water, oil and noncorrosive coolant. |





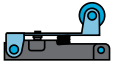

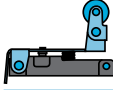




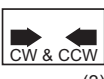

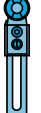
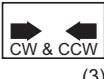


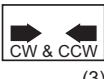

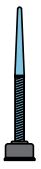
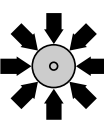


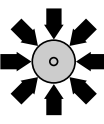

Limit switches

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 |
|---|---|---------------------|-------------------------------------|---------------------------|---|
| Plunger style | | | | | |
|  | ↓ | 0.5 m/s | Yes | Very high |  |
|  | ↔ | 0.85 m/s | Yes | High |  |
| Lever and roller lever plunger style | | | | | |
|  | → | 0.85 m/s | Yes | Medium |  |
|  | → | 0.85 m/s | Yes | Medium |  |
|  | → or ↓ | 0.5 m/s | No | High |  |
| Rotary style | | | | | |
|  |  | 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 |  |
| Multidirectional style | | | | | |
|  |  | 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...



| | |
|--|--|
| Enclosure (body) | |
| Conforming to standards | |
| Conformities | |
| Body dimensions in mm (w x h x d) | |
| Head | |
| Contact blocks | 1 C/O snap action - Form C 1 NO + 1NC snap action - Form Za |
| Degree of protection | |
| Cabling | Screw terminal Pre-cabled Connector |
| Type references | |
| Pages | |

| |
|---|
| Zinc alloy (cover: plastic) |
| IEC 60947-5-1 |
| CE, CCC |
| 28 x 64 x 25 |
| Linear, rotary or multi-directional |
| |
| |
| |
| – |
| • |
| IP 65 |
| Flexible rubber cable gland suitable for cable Ø 6...9 mm |
| – |
| – |
| XCE |
| 10 to 15 |

| |
|--|
| Plastic (cover: zinc alloy) |
| IEC 60947-5-1 |
| CE, CCC |
| 54 x 42 x 21 |
| Linear |
| |
| |
| |
| |
| |
| |
| |
| • |
| – |
| IP 40, IK 04 |
| Flexible rubber cable gland suitable for cable Ø 8.5...10.5 mm |
| – |
| – |
| XCJ |
| 16 to 19 |

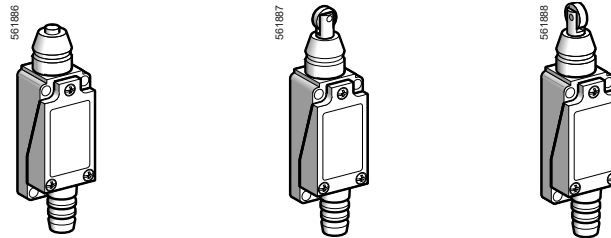
Limit switches

XC range

For medium duty applications, XCE

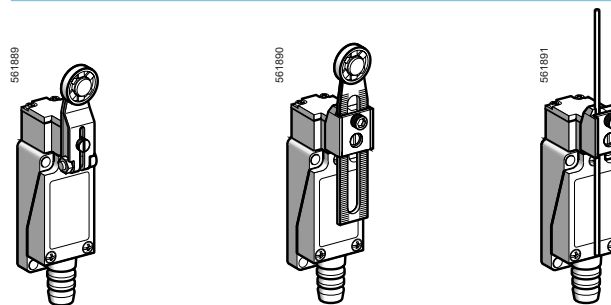
XCE (1 NO + 1 NC form Za)

With head for linear movement (plunger) operators



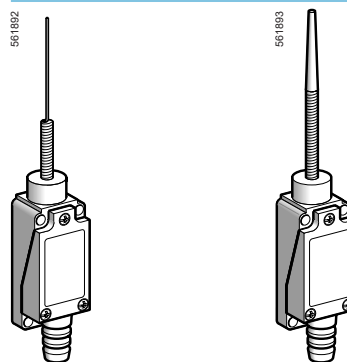
Page 11

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 IP 65 |
| Materials | Body and head: metal, cover: plastic |
| Mechanical durability | 10 x 10⁵ operations |
| 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 |

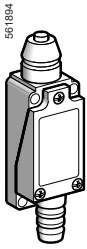


Contact block characteristics

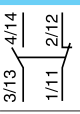
| | |
|-----------------------------------|--|
| Rated operational characteristics | ~ AC (Ue = 240 V, Ie = 3 A, Ith = 10 A); --- DC (Ue = 220 V, Ie = 0.3 A) |
| Rated insulation voltage | Ui=300V, pollution degree 3 complies with IEC 60947 |
| Insulation resistance | > 100 mΩ at 500 V |
| Operating frequency | 120 operations per minute |
| Electrical endurance | 8 x 10 ⁵ 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 ² per terminal |

Limit switches

XC range

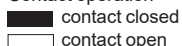
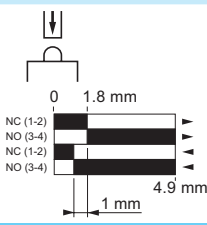
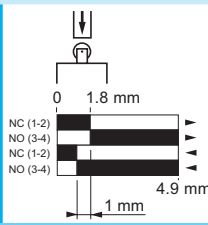
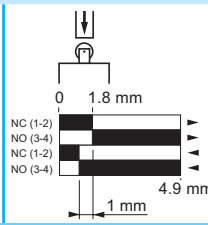
For medium duty applications, XCE

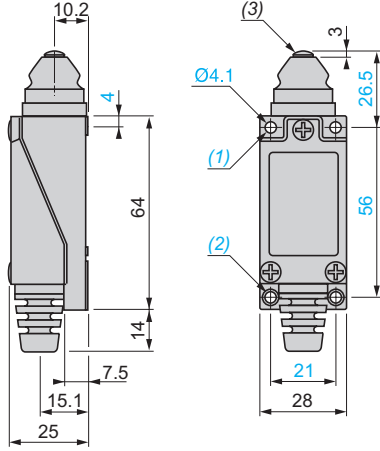
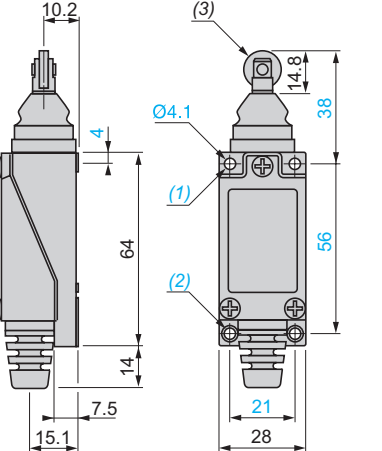
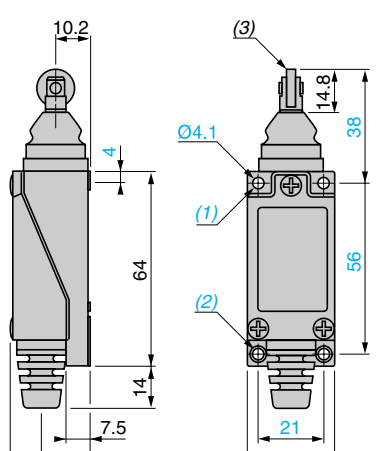
| Type of operating head | | | |
|------------------------|---|--|---|
| Plunger | | | |
| |  |  |  |
| Type of operator | Steel end plunger | Steel roller plunger for lateral cam movement | Steel roller plunger for traverse cam movement |

| 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 ⁶ 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.

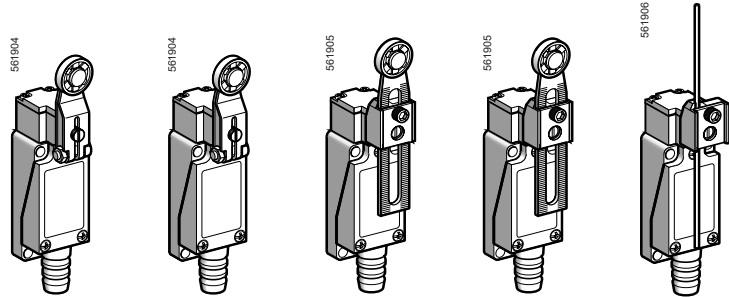
Limit switches

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 |
|-----------------------|----------------------------|--------------------|--|------------------------------------|----------------------------|
| References (1) | | | | | |
| 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)

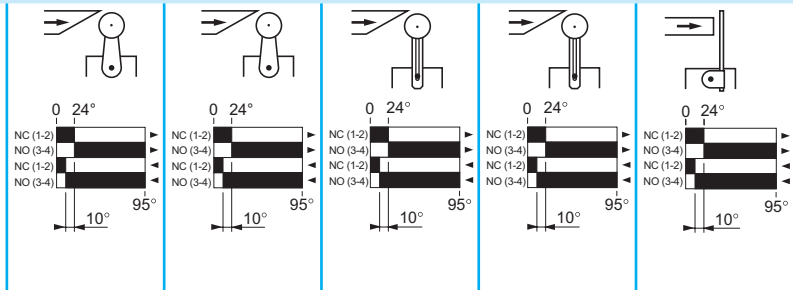
| | | |
|-------------------------|--|--------------------|
| Switch actuation | By 30° cam | By any moving part |
| Operating force (maxi.) | 7.5 N | |
| Release force (mini.) | 0.5 N | |
| Operating frequency | 120 operations per minute | |
| Maximum actuation speed | 1 m/s | |
| Minimum actuation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

Operating diagrams

Type of actuation

Operating diagrams

Contact operation
 contact closed
 contact open



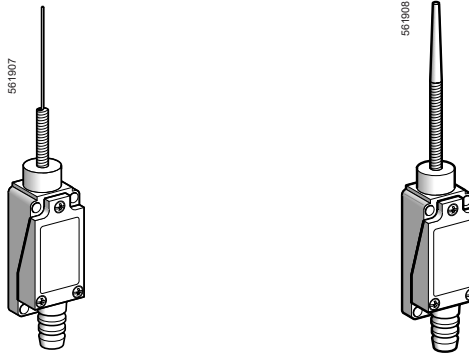
(1) All products are supplied in individual packaging. They are also available in a bulk pack of 10 products. To order the bulk packed versions, add the suffix **TQ** at the end of product reference. Example **XCE118CTQ**. Obviously the indivisible order quantity for this version is 10.

Limit switches

XC range

For medium duty applications, XCE

Type of operating head
Multi-directional



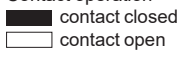
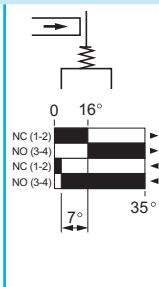
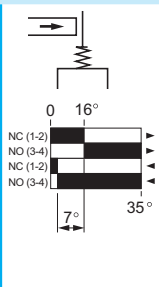
| | | |
|------------------|-----------------|---|
| Type of operator | “Cat’s whisker” | Spring rod lever with thermoplastic end |
|------------------|-----------------|---|

| | | |
|--------------------------|---|---------|
| References (1) | | |
| 1 NO + 1 NC (form Za) |  | |
| | XCE106C | XCE181C |

| | | |
|-------------|-------|-------|
| Weight (kg) | 0.109 | 0.108 |
|-------------|-------|-------|

| | |
|--|---|
| 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 ⁶ operations |
| Cabling | Flexible rubber cable gland suitable for cable Ø 6...9 mm Maximum clamping capacity 1.5 mm ² per terminal |

Operating diagrams
Type of actuation

| | | |
|---|---|---|
| Operating diagrams 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

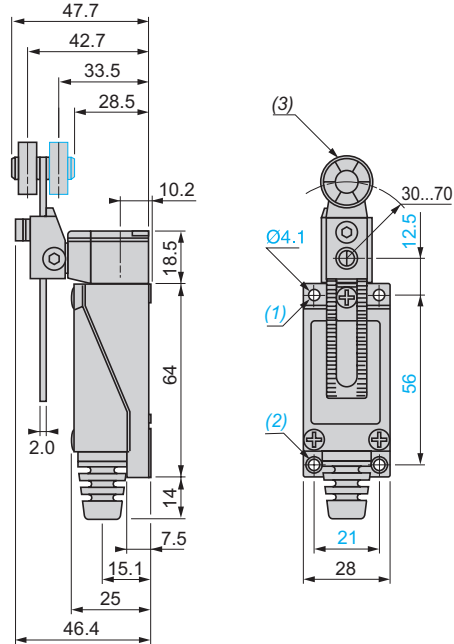
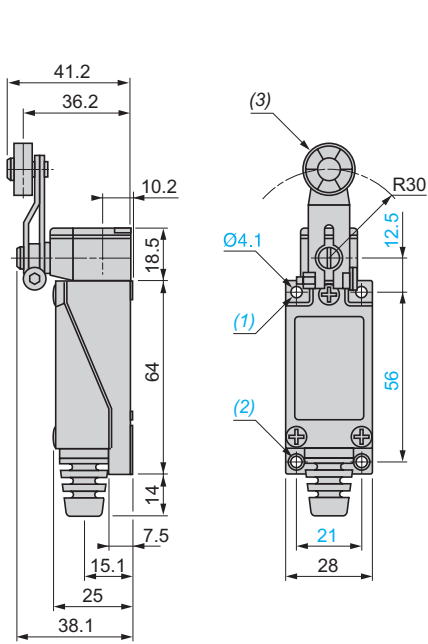
XC range

For medium duty applications, XCE

Dimensions in mm

XCE118C, XCE119C

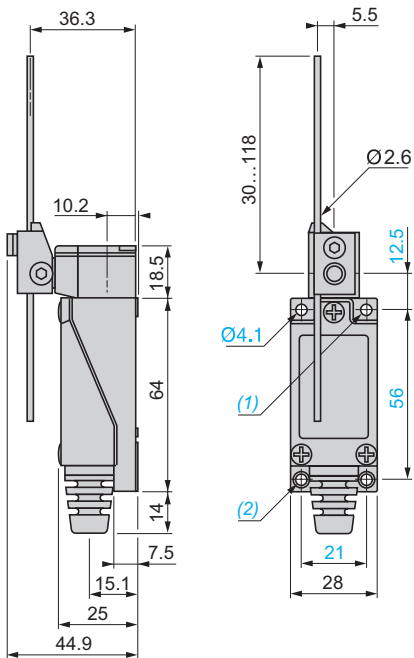
XCE145C, XCE146C



- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.
- (3) Nylon roller Ø 8 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 roller Ø 8 x 7.

XCE154C

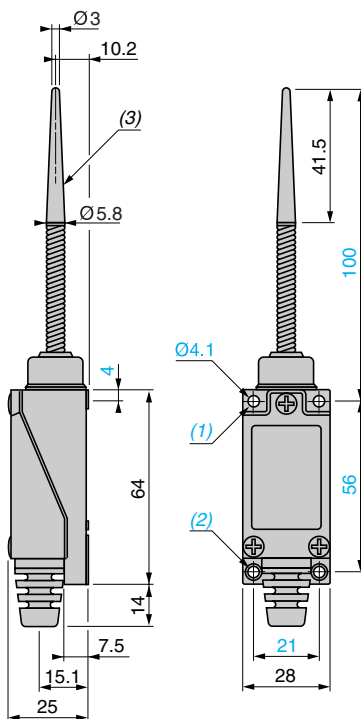
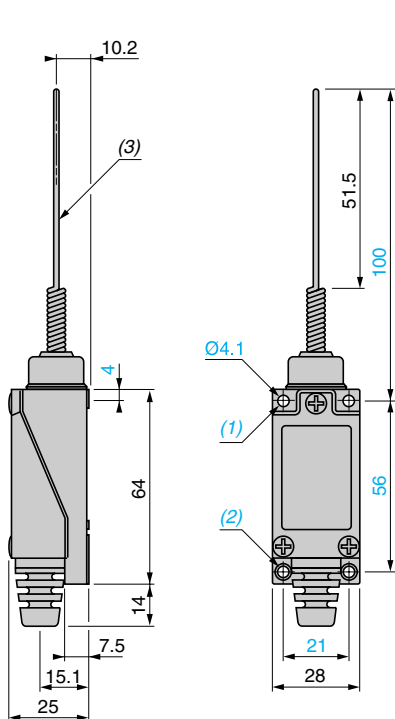


- (1) 2 holes M5 tapped 7 in depth.
- (2) 2 M5 tapped holes.

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.

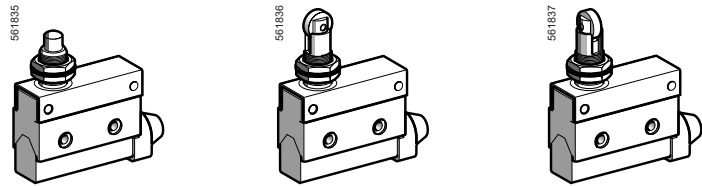
Limit switches

XC range

For light to medium duty applications, XCJ

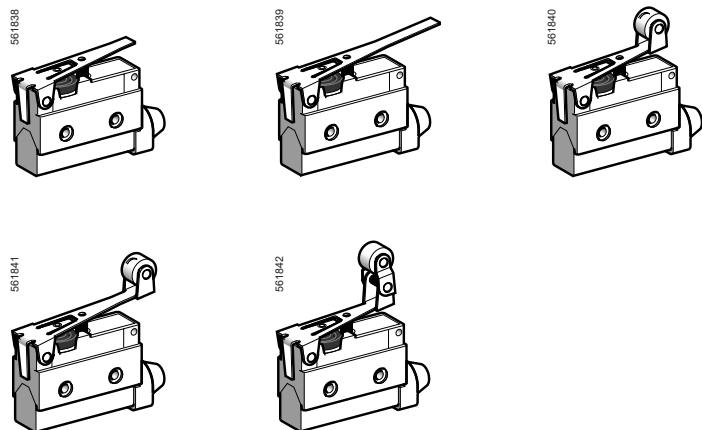
XCJ (single-pole contact 1 C/O form C)

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 IP 40 IK 04 |
| Materials | Body: plastic, head: metal |
| Mechanical durability | 10 x 10⁶ operations |
| 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 |

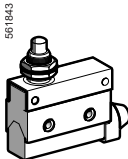
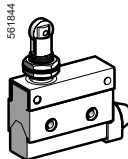
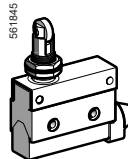

Contact block characteristics

| | |
|-----------------------------------|---|
| 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 ⁵ 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 |



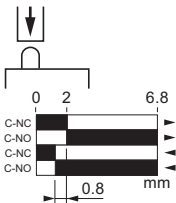
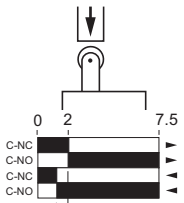
Limit switches

XC range

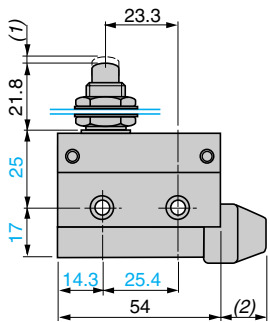
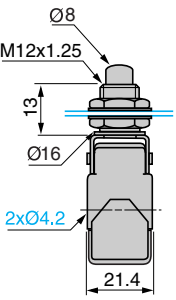
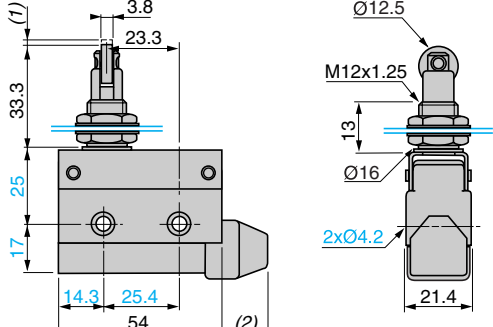
For light to medium duty applications, XCJ

| 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 |
| Complementary characteristics 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 ⁶ 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 |
|---|--|
|  <p>(1) 2 max. (2) 16.5 max.</p> |  <p>(1) 2 max. (2) 16.5 max.</p> |
| XCJ103C | |
|  <p>(1) 2 max. (2) 16.5 max.</p> | |

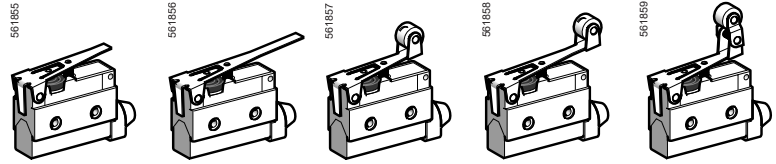
Limit switches

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 |
|--------------------------|-------------------------|---------------------------------|--------------------------------|--|

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)

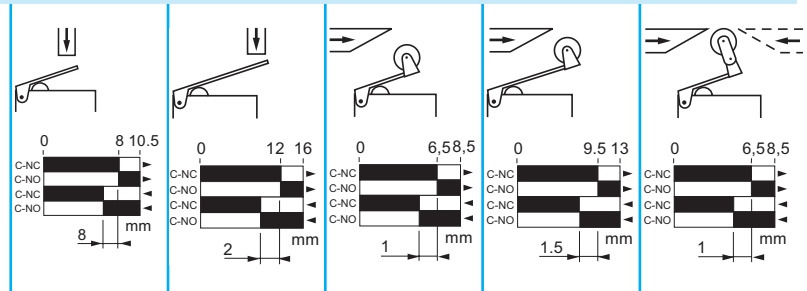
| | | | | | |
|-------------------------|--|--------|------------|--------|--------|
| Switch actuation | On end | | By 30° cam | | |
| Operating force (maxi.) | 1.9 N | 1.3 N | 2.3 N | 1.6 N | 2.4 N |
| Release force (mini.) | 0.59 N | 0.39 N | 0.78 N | 0.49 N | 0.98 N |
| Operating frequency | 120 operations per minute | | | | |
| Actuation speed | 0.01 mm/s...50 cm/s (at pin plunger) | | | | |
| Mechanical durability | 10 x 10 ⁶ 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

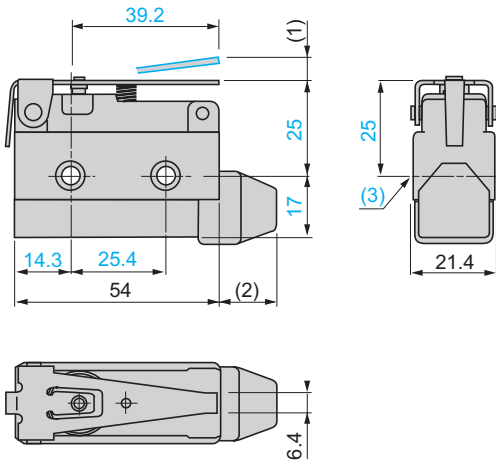
Operating diagrams
Contact operation

 ■ contact closed
 □ contact open



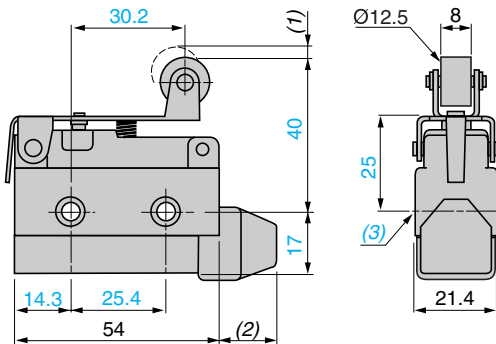
Dimensions in mm

XCJ125C



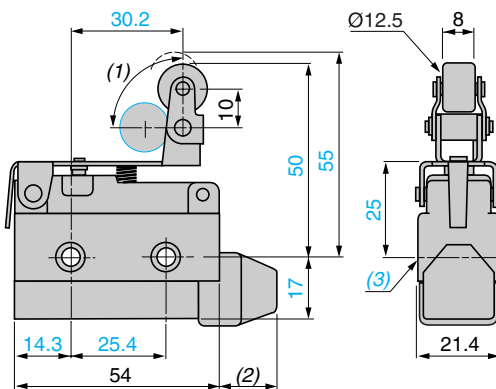
- (1) 8.5 max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

XCJ127C



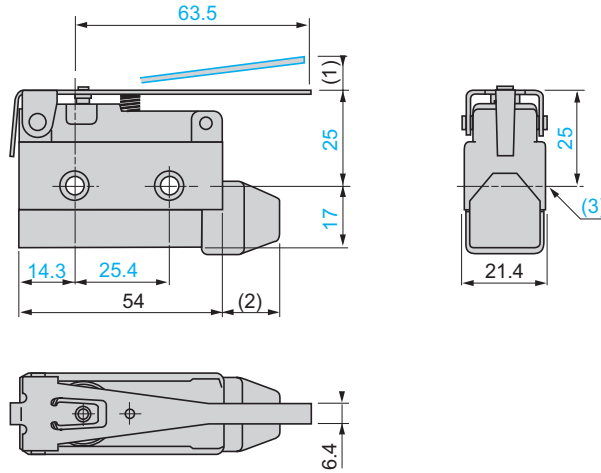
- (1) 6.5 max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

XCJ121C



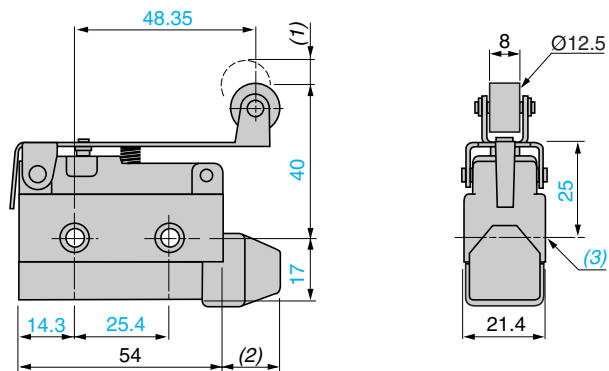
- (1) 90° max.
- (2) 16.5 max.
- (3) 2 x Ø 4.2

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 |

Schneider Electric Industries SAS

Head Office
35, rue Joseph Monier
F-92500 Rueil-Malmaison
France

www.tesensors.com

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