

Limit switches

OsiSense™ XC Special

For hoisting applications
type XCR, XCKMR, XCKVR

Catalog



Telemecanique

Sensors

Limit switches

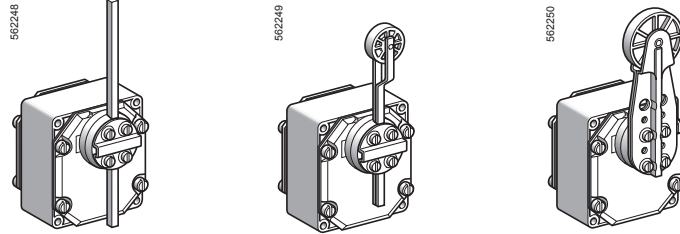
OsiSense™ XC Special

For hoisting applications,
types XCR, XCKMR, XCKVR

■ XCR

□ With head for rotary movement operators, spring return to the Off position

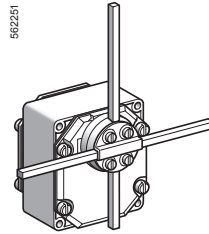
1 contact actuation position per direction



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□ With head for rotary movement operators, maintained

1 contact actuation position per direction

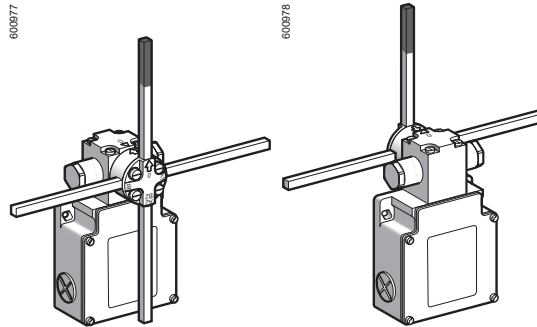


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■ XCKMR (metal)

□ With head for rotary movement operators, maintained

4 mechanical actuation positions of 4 contacts
From 2 to 5 electrical positions depending on model

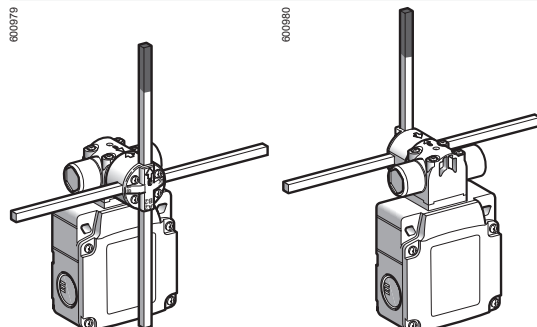


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■ XCKVR (plastic)

□ With head for rotary movement operators, maintained

4 mechanical actuation positions of 4 contacts
From 2 to 5 electrical positions depending on model



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| Environmental specifications | | | | |
|---|---|--|---|--|
| Limit switches | | XCR | XCKMR (metal) | XCKVR (plastic) |
| Conformity to standards | Products | EN/IEC 60947-5-1, CSA C22-2 no. 14, CCC | EN/IEC 60947-5-1, CSA C22-2 no. 14, UL 508, CCC | |
| | Machine assemblies | EN/IEC 60204-1 | | |
| Product certifications | | XCR A, B, E, F: CE, CSA, CCC, GOST | CE, UL, CSA, CCC, GOST | |
| Protective treatment | Standard version | TC | | |
| Ambient air temperature | For operation | -13 to +158 °F (-25 to +70 °C) | -13 to +158 °F (-25 to +70 °C) | -13 to +158 °F (-25 to +70 °C) |
| | For storage | -40 to +158 °F (-40 to +70 °C) | -40 to +185 °F (-40 to +85 °C) | -40 to +158 °F (-40 to +70 °C) |
| Vibration resistance | Conforming to EN/IEC 60068-2-6 | 9 gn (10-500 Hz) | 25 gn (10-500 Hz) | 25 gn (10-500 Hz) |
| Shock resistance | Conforming to EN/IEC 60068-2-27 | XCR A, B, E, F: 68 gn, XCR : 30 gn (18 ms) | 50 gn | 50 gn |
| Electric shock protection | | Class I conforming to IEC 60536 | | Class II conforming to IEC 60536 |
| Degree of protection | Conforming to EN/IEC 60529 | XCR A, B, E, F: IP54 | IP66 | IP65 |
| Degree of protection against mechanical impacts | Conforming to EN 50102 | IK07 | IK07 | IK04 |
| Materials | Enclosure | Metal | Zamak ZP3 | (PBT + PC) - GF 30 FR (Valox) |
| | Cover | Metal | DC03 steel | (PBT + PC) - GF 30 FR (Valox) |
| | Head | Metal | Zamak ZP3 | (PBT + PC) - GF 30 FR (Valox) |
| Cable entry | Depending on model | 1/2"-14 NPT conduit entry using optional adapter (sold separately). | 1/2"-14 NPT conduit entry using optional adapter (sold separately). Other options available. | 1/2"-14 NPT conduit entry using optional adapter (sold separately). Other options available. |
| Contact block specifications | | | | |
| Rated operational specifications | Conforming to EN/IEC 60947-5-1 Appendix A | XCR A, B, E, F: ~ AC-15; A300 (Ue = 240 V, Ie = 3 A), Ithe = 10 A --- DC-13; Q300 (Ue = 250 V, Ie = 0.27 A) | ~ AC-15; A300 (Ue = 240 V, Ie = 3 A), Ithe = 10 A --- DC-13; Q150 (Ue = 125 V, Ie = 0.55 A) | |
| Rated insulation voltage | | Ui = 500 V degree of pollution 3 conforming to EN/IEC 60947-1 Ui = 300 V conforming to UL 508, CSA C22-2 no. 14 | | |
| Rated impulse withstand voltage | | Uimp = 6 kV conforming to EN/IEC 60947-1, IEC 60664 | | |
| Positive operation (depending on model) | | NC contacts with positive opening operation conforming to EN/IEC 60947-5-1 Section 3 | NC contacts with positive opening operation conforming to EN/IEC 60947-5-1 Section 3 (contacts 21-22) | |
| Resistance across terminals | | ≤ 25 mΩ conforming to NF C 93-050 method A or IEC 60255-7 category 3 | | |
| Short-circuit protection | | 10 A cartridge fuse type gG (gl) | | |
| Connection | Screw clamp terminals | Clamping capacity XE2N P2151: min: 1 x 0.5 mm ² , max: 2 x 2.5 mm ² XE2S P2151: min: 1 x 0.34 mm ² , max: 2 x 1.5 mm ² | Clamping capacity min: 1 x 0.5 mm ² max: 2 x 2.5 mm ² | |

Limit switches

OsiSense™ XC Special

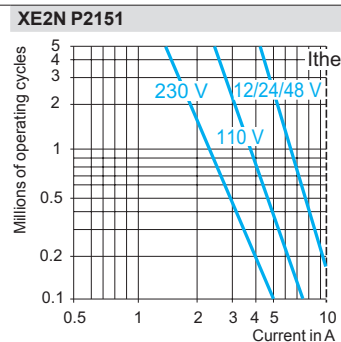
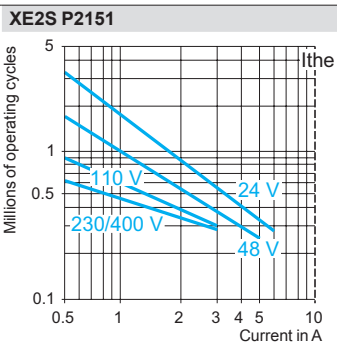
For hoisting applications,
types XCR, XCKMR, XCKVR

Contact block specifications (continued)

Electrical durability

- Conforming to EN/IEC 60947-5-1 Appendix C
- Utilization categories AC-15 and DC-13
- Maximum operating rate: 3600 operating cycles/hour
- Load factor: 0.5

AC supply
~ 50/60 Hz
~ inductive circuit



DC supply ---

| | Voltage V | 24 | 48 | 120 |
|---|-------------------|----|----|-----|
| Power (W) broken for 5 million operating cycles | XE2S P2151 | 10 | 7 | 4 |
| | XE2N P2151 | 13 | 9 | 7 |

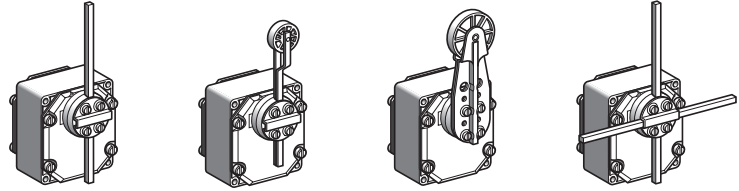
For XE2SP•151 AC or DC, the NC and NO contacts must be of the same polarity.

Limit switches

OsiSense™ XC Special

For hoisting applications, types XCR
Complete switches with 1 cable entry

| | | |
|----------------------|---|-----------------------|
| Type of head | Rotary with spring return to Off position | Maintained |
| Maximum displacement | 55° in each direction | 90° in each direction |



| | | | | |
|------------------|-------------------------------|----------------------------|----------------------------------|--|
| Type of operator | Metal rod, \varnothing 6 mm | Thermoplastic roller lever | Large thermoplastic roller lever | Metal rods, \varnothing 6 mm, crossed or "T" (1) |
|------------------|-------------------------------|----------------------------|----------------------------------|--|

(1) Crossed rods for XCR E●8, "T" rods for XCR F●7.

Catalog numbers of complete switches (↻ NC contact with positive opening operation)

| | | | | | |
|---|--|---------------------|---------------------|---------------------|---------------------|
| Two 2-pole NC + NO snap action XE2SP2151 1 st contact 2 nd contact | Both contacts operate in each direction | XCRA11 ↻ | XCRA12 ↻ | XCRA15 ↻ | XCRE18 ↻ |
| | 1 contact operates in each direction | XCRB11 ↻ | XCRB12 ↻ | XCRB15 ↻ | XCRF17 ↻ |
| Two 2-pole NC + NO break before make, slow break XE2NP2151 1 st contact 2 nd contact | Both contacts operate in each direction | XCRA51 ↻ | XCRA52 ↻ | XCRA55 ↻ | XCRE58 ↻ |
| | 1 contact operates in each direction | XCRB51 ↻ | XCRB52 ↻ | XCRB55 ↻ | XCRF57 ↻ |
| Weight lb (kg) | 2.45 (1.110) | 2.52 (1.145) | 2.55 (1.155) | 2.50 (1.135) | |
| Contact operation | (P) = positive opening point □ = open | | | | |

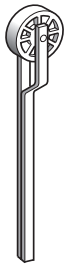
Complementary specifications

| | | | |
|-------------------------|--|------------------------|------------------------|
| Maximum actuation speed | 1.5 ms | | |
| Mechanical durability | 10 million operating cycles | | |
| Minimum torque | For tripping | 3.98 lb-in. (0.45 N•m) | 5.31 lb-in. (0.60 N•m) |
| | For positive opening | 6.64 lb-in. (0.75 N•m) | 6.20 lb-in. (0.70 N•m) |
| Cable entry | 1 entry tapped for Pg 13.5 cable connector conforming to NF C 68-300 (DIN Pg 13.5) Clamping capacity 9 to 12 mm For 1/2"-14 NPT conduit entry, add H2 suffix (Example: XCRA11H2) DE9RA1212 Pg 13.5 to 1/2"-14 NPT conduit adapter can also be used (sold separately). | | |

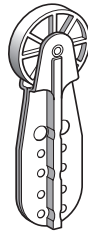
Limit switches

OsiSense™ XC Special

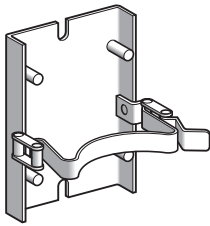
For hoisting applications, types XCR
Complete switches with 1 cable entry
Separate components



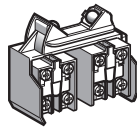
XCRZ02



XCRZ05



XCRZ09



XCRZ12



DE9RA1212 adapter

Separate components

| Description | For switches | Type | Catalog number | Weight lb (kg) |
|---|--------------------------|---|----------------|----------------|
| Rod, \varnothing 6 mm | XCRA XCRB | 200 mm long | XCRZ03 | 0.04 (0.020) |
| | | 300 mm long | XCRZ04 | 0.07 (0.030) |
| Roller lever thermoplastic roller | XCRA XCRB | – | XCRZ02 | 0.11 (0.050) |
| | | – | XCRZ05 | 0.20 (0.090) |
| Quick mounting/ release bracket | XCRA, XCRB XCRC, XCRF | – | XCRZ09 | 1.15 (0.520) |
| Contact block (2 contacts) with mounting plate | XCRA, XCRB XCRC, XCRF | 2-pole NC + NO snap action | XCRZ12 | 0.30 (0.135) |
| | | 2-pole NC + NO break before make, snap action | XCRZ15 | 0.30 (0.135) |

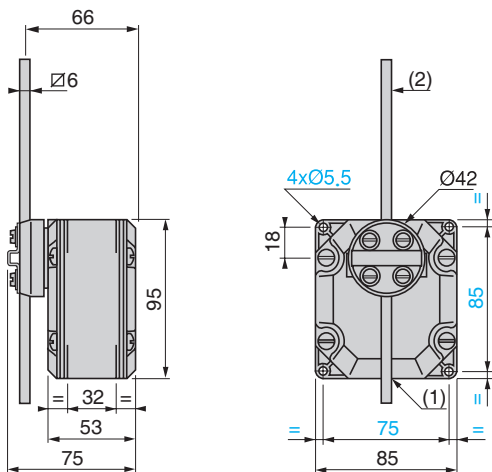
| Description | Application | Sold in lots of | Unit catalog number | Weight lb (kg) |
|----------------|----------------------------|-----------------|---------------------|----------------|
| Adapter | For use with XCRA/B/E/F | 10 | DE9RA1212 | 0.11 (0.050) |

Limit switches

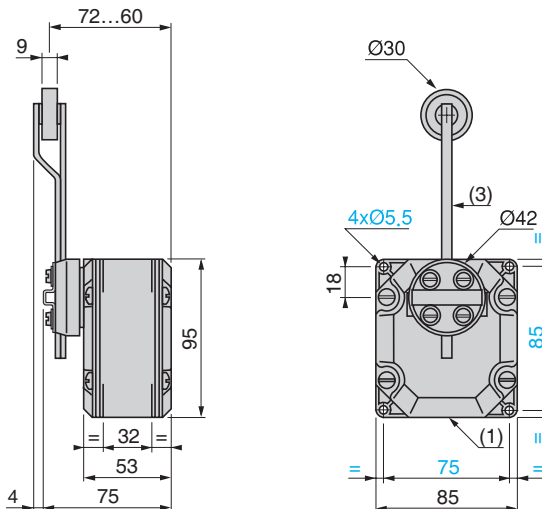
OsiSense™ XC Special

For hoisting applications, types XCR
Complete switches with 1 cable entry

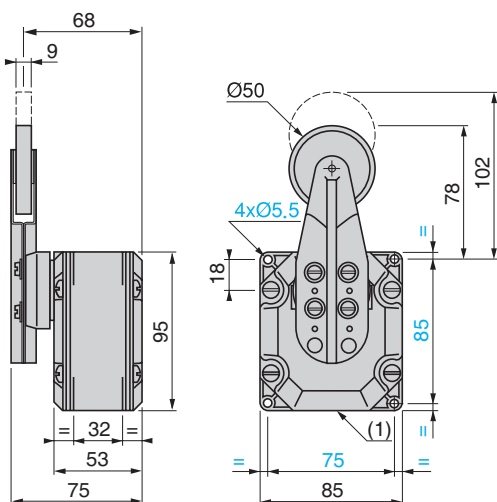
XCRA11, B11, A51, B51



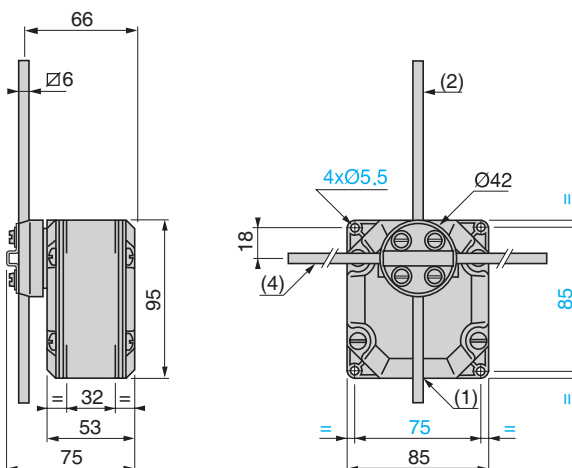
XCRA12, B12, A52, B52



XCRA15, B15, A55, B55



XCRE18, E58, F17, F57



(1) 1 tapped entry for Pg 13.5 cable connector. H2-suffix versions tapped for 1/2"-14 NPT or supplied with DE9RA1212 adapter.

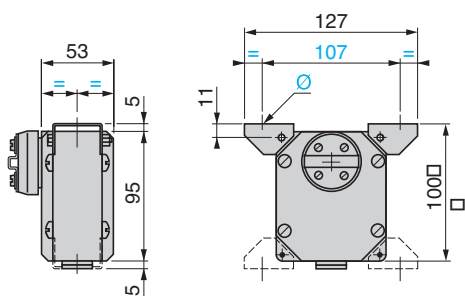
(2) Rod length: 200 mm.

(3) Rod + roller length: 160 mm.

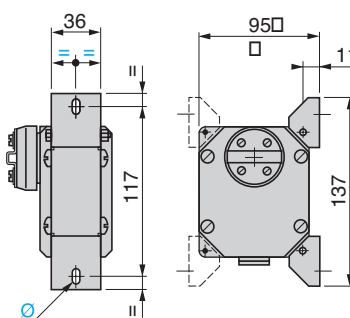
(4) Rod length: 300 mm for XCRF17 and F57, 200 mm for XCRE18 and E58.

Supplementary mounting using 2 adjustable lugs (included with switch)

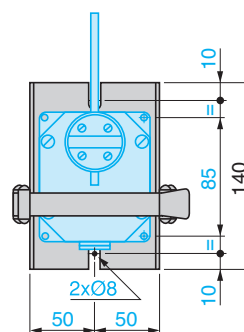
Horizontally positioned



Vertically positioned



Quick mounting/release bracket XCRZ09



Ø: 1 elongated hole Ø 6 x 8.

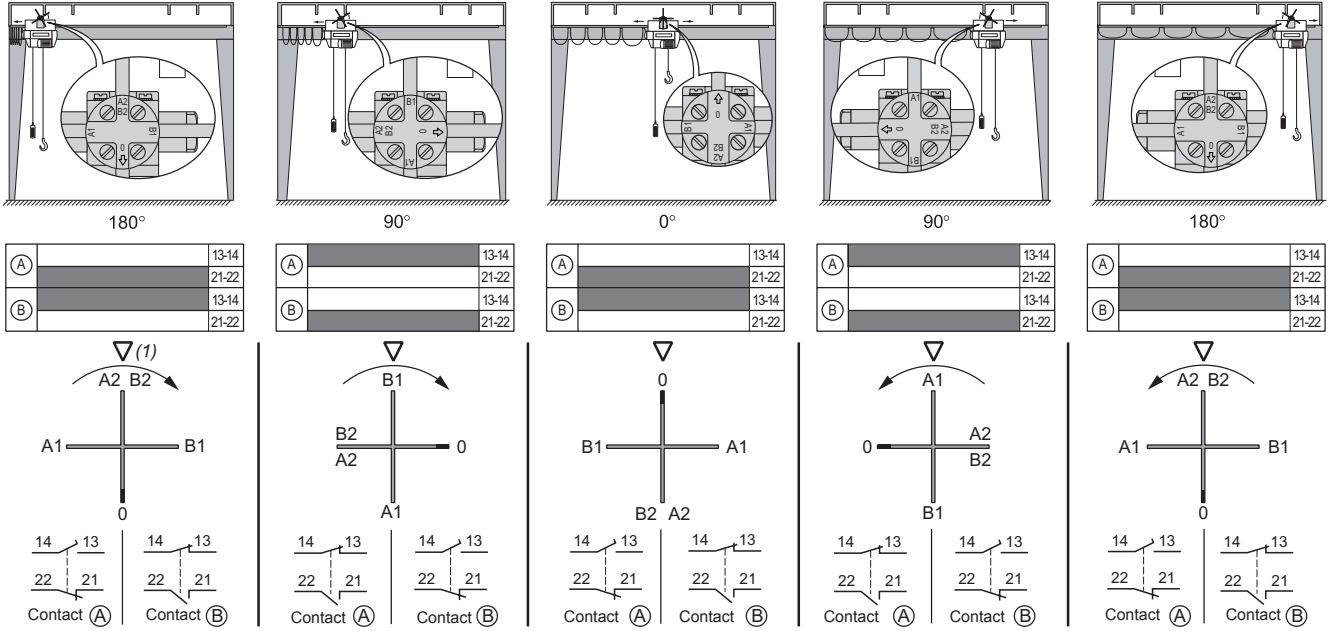
Limit switches

OsiSense™ XC Special

For hoisting applications, type XCKMR and XCKVR
Complete switches with 3 cable entries

Operation

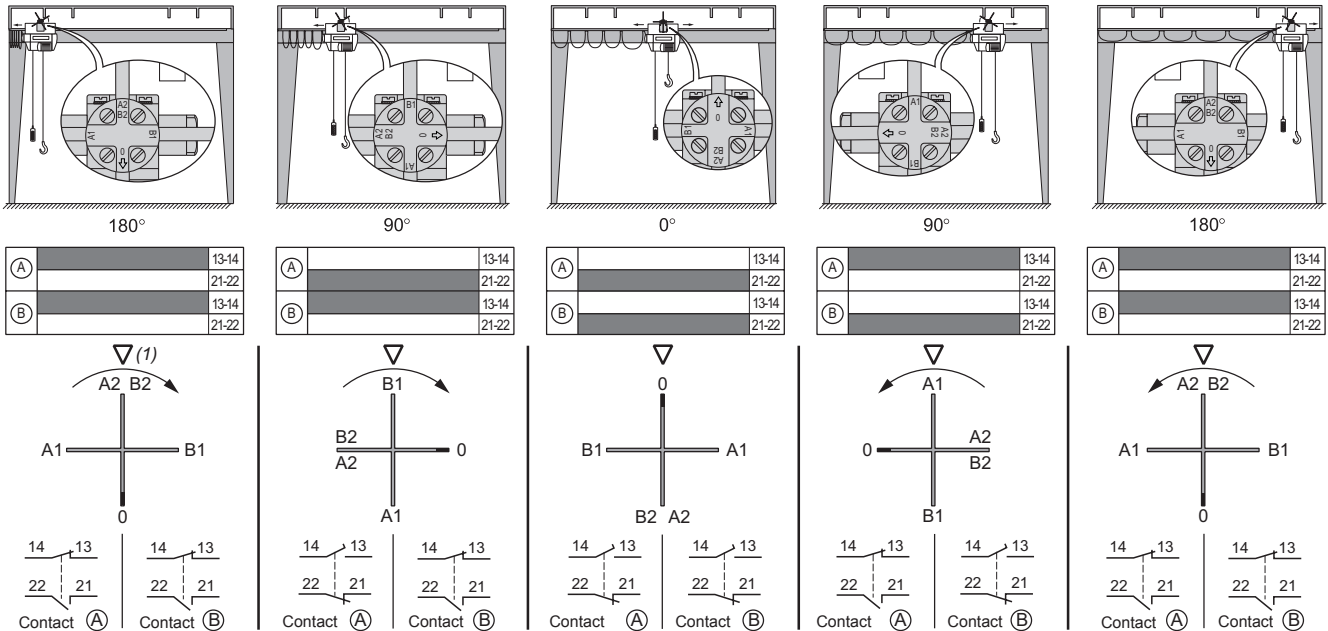
Bypass limit switches XCK●R24SR1H29



(1) Triangle symbol marked on top of head.

or : direction of rotation.

Single-speed limit switches XCK●R44D●H29



(1) Triangle symbol marked on top of head.

or : direction of rotation.

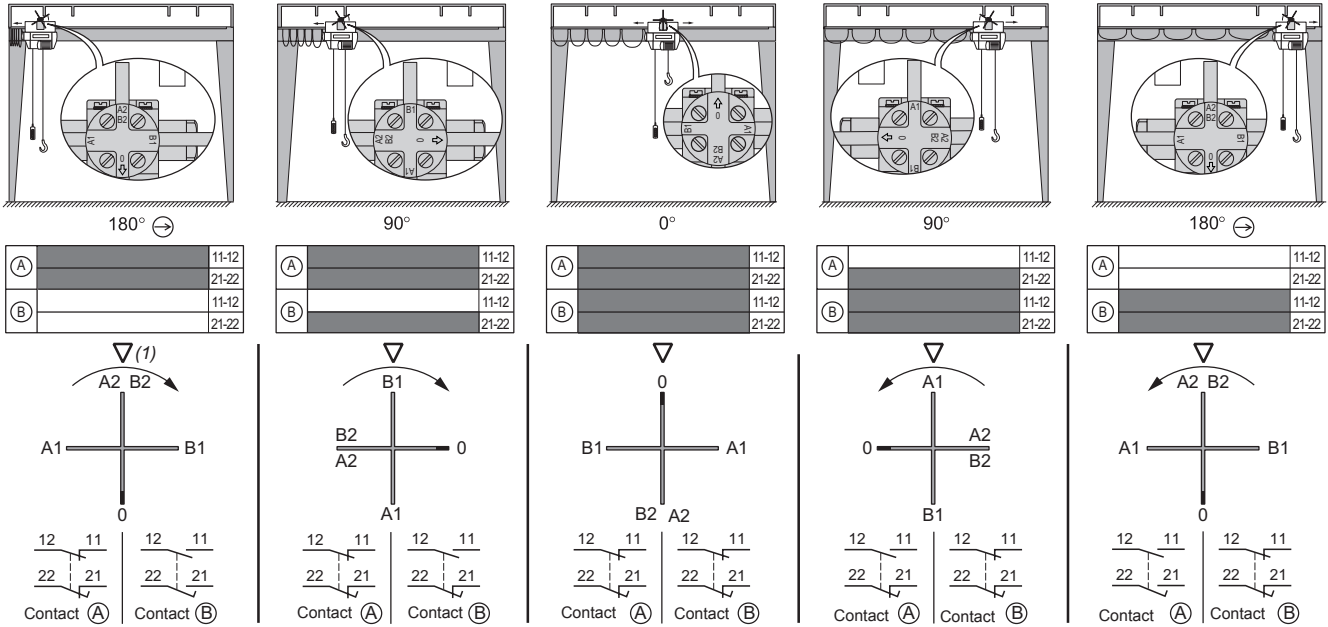
Limit switches

OsiSense™ XC Special

For hoisting applications, type XCKMR and XCKVR
Complete switches with 3 cable entries

Operation (continued)

Two-speed limit switches XCK●R54D●●●●



(1) Triangle symbol marked on top of head.

↻ or ↻ : direction of rotation.

Limit switches

OsiSense™ XC Special

For hoisting applications, type XCKMR and XCKVR
Complete switches with 3 cable entries

| Type of operating head | Rotary | | | |
|------------------------|--------|--|--|--|
| | | | | |

| Material | Metal | | Plastic | |
|------------------|---------------------------|--|---------------------------|--|
| Type of operator | With cruciform metal rods | With cruciform metal rods, reversed head | With cruciform metal rods | With cruciform metal rods, reversed head |

| Catalog numbers | | | | |
|-----------------------|--|------------------|------------------|---------------|
| Bypass switches | | | | |
| | 2 x 2-pole NC NO break before make, slow break (XE2 NP2151) | XCKMR24SR1H29 | – | XCKVR24SR1H29 |
| Single-speed switches | | | | |
| | 2 x 2-pole NC NO break before make, slow break (XE2 NP2151) | XCKMR44D1H29 | XCKMR44D2H29 | XCKVR44D1H29 |
| | 2 x 2-pole NC NC break before make, slow break (noninterchangeable contacts) | XCKMR54D1H29 (1) | XCKMR54D2H29 (1) | XCKVR54D1H29 |
| | | | | XCKVR54D2H29 |
| Weight lb (kg) | | 1.51 (0.684) | 1.51 (0.684) | 0.71 (0.320) |

| Complementary specifications | | |
|--|---|----------------------------|
| Switch actuation | Horizontal | Horizontal |
| Acceptable actuation area on the roads | Between 2.65 and 3.74 in. (65 and 95 mm) from the axis of the mounting screws of the body | |
| Minimum actuation speed | 0.1 m/mn | 0.1 m/mn |
| Maximum actuation speed (2) | 1.5 ms | 1.5 ms |
| Minimum force or torque | For tripping For positive opening | 0.5 N•m 0.75 N•m |
| Mechanical durability | 2 million operating cycles | 1 million operating cycles |
| Setting up | Rods included with the switch: for customer assembly | |

| Catalog numbers of separate components | | | |
|--|---|----------------|----------------|
| | Description | Catalog number | Weight lb (kg) |
| | Rod Ø6 mm, length 200 mm (7.87 in.) | XCRZ03 | 0.044 (0.020) |
| | Rod Ø6 mm, length 200 mm (7.87 in.) with red mark | XCRZ03R | 0.044 (0.020) |
| | M20 x 1.5 to 1/2"-14 NPT adapter | DE9RA2012 | 0.11 (0.050) |
| | Plastic cable connector ISO M20 | DE9PEM20010 | 0.022 (0.010) |

(1) For switches with entry for Pg 13.5 cable connector, delete H29 from the end of the catalog number. Example: XCKMR54D1H29 becomes XCKMR54D1.
 (2) For an actuation point on the rod between 2.65 and 3.74 in. (65 and 95 mm) from the axis of the mounting screws of the body.

Limit switches

OsiSense™ XC Special

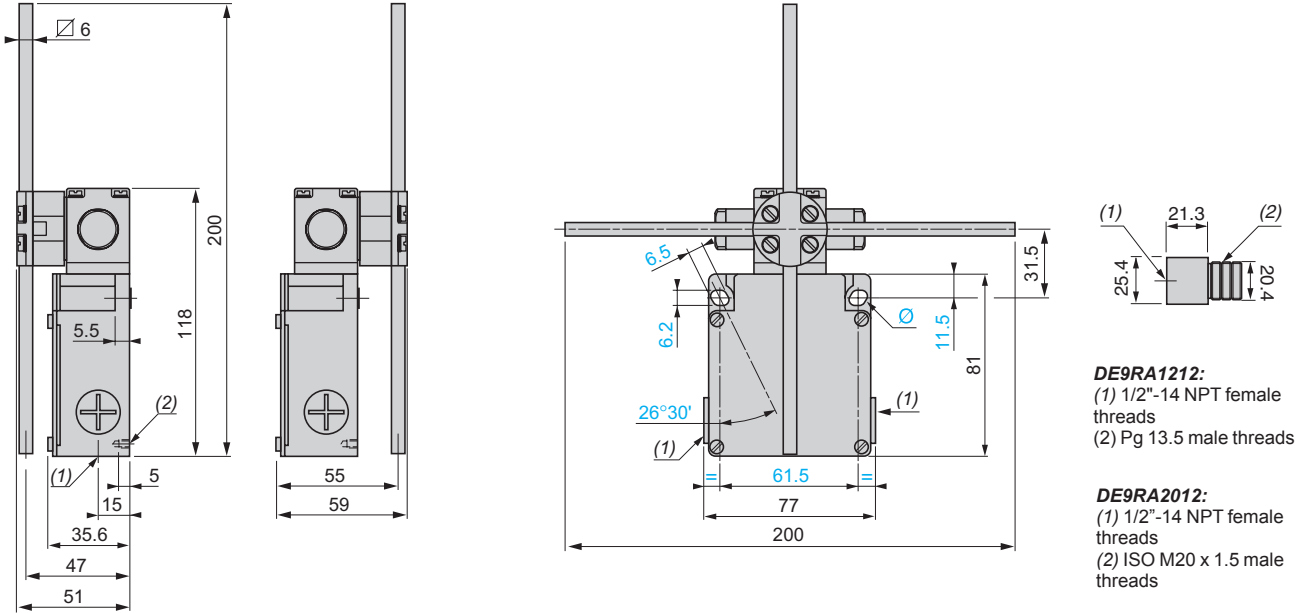
For hoisting applications, type XCKMR and XCKVR
Complete switches with 3 cable entries

Dimensions

Metal limit switches

XCKMR24SR1H29,
XCKMR44D1H29 and
XCKMR54D1H29

XCKMR44D2H29 and XCKMR54D2H29

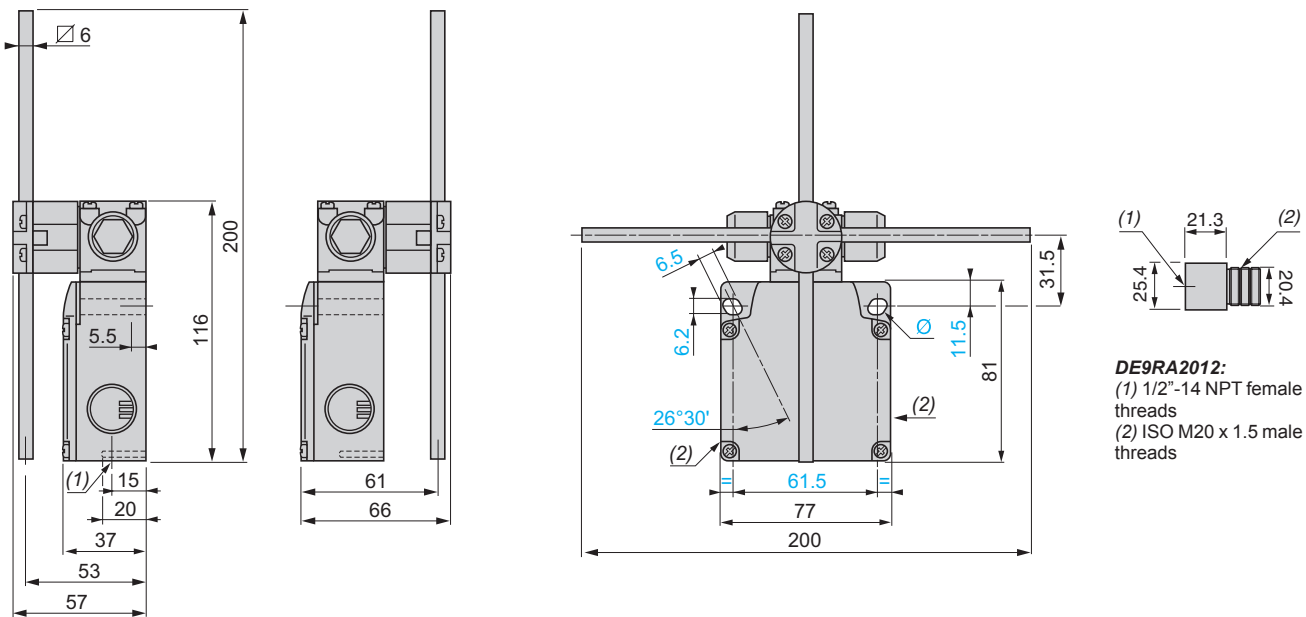


(1) XCKMR●●●●H29 = 3 tapped entries ISO M20 x 1.5. Order the **DE9RA2012** adapter to convert to 1/2"-14 NPT conduit entry.
XCKMR●●● = 3 tapped entries for Pg 13.5 cable connector. Order **DE9RA1212** adapter to convert to 1/2"-14 NPT conduit entry.
(2) 2 centering holes $\varnothing 3.9 \pm 0.2$, for cover mounting holes alignment.
 \varnothing : 2 elongated holes 6.2 x 6.5, inclined at 26°30' to the vertical axis, for M5 screws.

Plastic limit switches

XCKVR24SR1H29,
XCKVR44D1H29 and
XCKVR54D1H29

XCKVR44D2H29 and XCKVR54D2H29



(1) 1 tapped entry ISO M20 x 1.5. Order the **DE9RA2012** adapter to convert to a 1/2"-14 NPT conduit entry.
(2) 2 breakout holes for ISO M20 cable connector (catalog number: **DE9PEM20010**).
 \varnothing : 2 elongated holes 6.2 x 6.5, inclined at 26°30' to the vertical axis.