

Limit switches

OsiSense™ XC Special

For hoisting applications
type XCR, XCKMR, XCKVR

Catalog



Telemecanique

Sensors

Limit switches

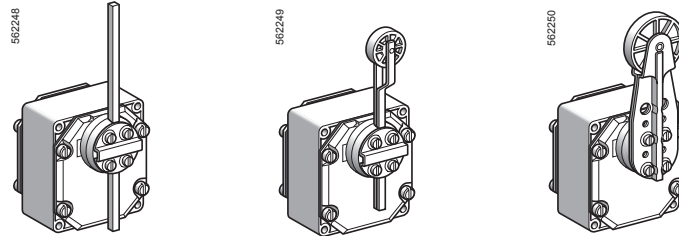
OsiSense™ XC Special

For hoisting applications,
types XCR, XCKMR, XCKVR

■ XCR

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

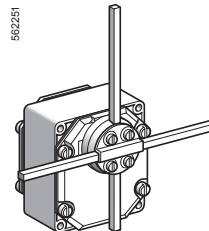
1 contact actuation position per direction



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□ With head for rotary movement operators, maintained

1 contact actuation position per direction



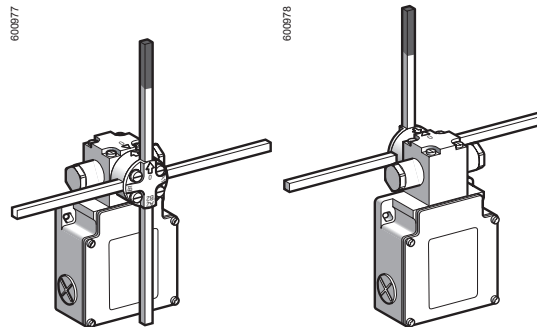
Page 6/4

■ 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



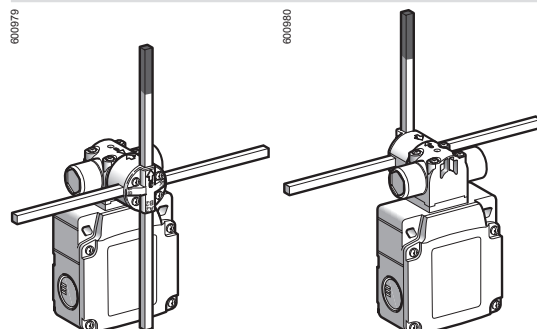
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■ XCKVR (plastic)

□ 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		XCRA, 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	XCRA, 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	XCRA, 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	XCRA, 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	Clamping capacity	
		XE2N P2151: min: 1 x 0.5 mm², max: 2 x 2.5 mm² XE2S P2151: min: 1 x 0.34 mm², max: 2 x 1.5 mm²	min: 1 x 0.5 mm² max: 2 x 2.5 mm²	

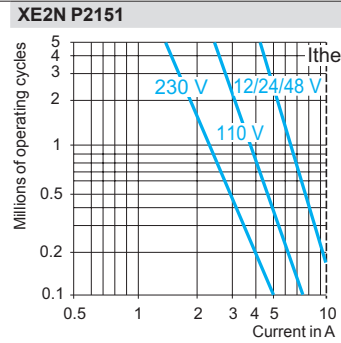
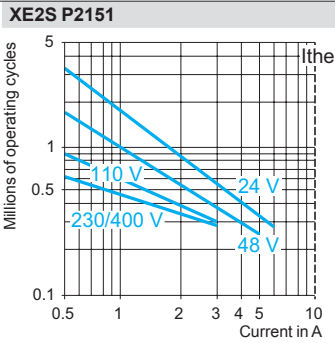
Limit switches
OsiSense™ XC Special
For hoisting applications,
types XCR, XCKMR, XCKVR

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

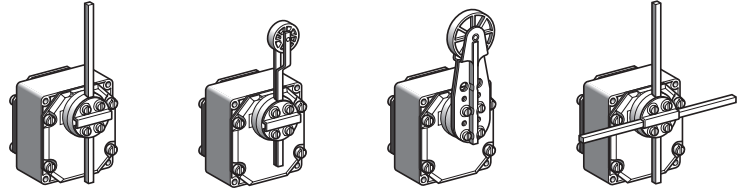
For XE2SP•151 AC or DC, the NC and NO contacts must be of the same polarity.

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

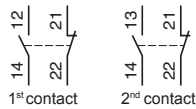


Type of operator	Metal rod, Ø6 mm	Thermoplastic roller lever	Large thermoplastic roller lever	Metal rods, Ø6 mm, crossed or "T" (1)
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(1) Crossed rods for XCR E●8, "T" rods for XCR F●7.

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

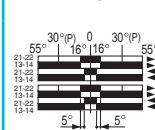
Two 2-pole NC + NO
snap action XE2SP2151



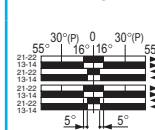
Both contacts operate in each
direction

1 contact operates in each
direction

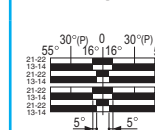
XCRA11 →



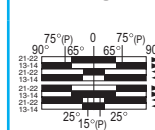
XCRA12 →



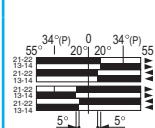
XCRA15 →



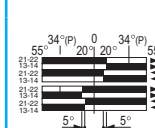
XCRE18 →



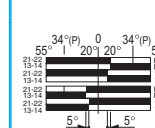
XCRB11 →



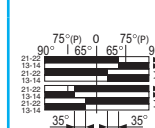
XCRB12 →



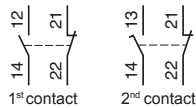
XCRB15 →



XCRF17 →



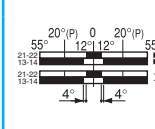
Two 2-pole NC + NO break
before make, slow break
XE2NP2151



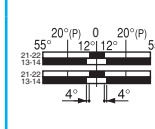
Both contacts operate in each
direction

1 contact operates in each
direction

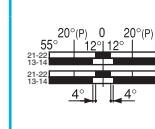
XCRA51 →



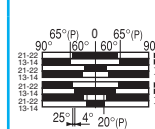
XCRA52 →



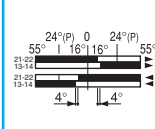
XCRA55 →



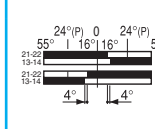
XCRE58 →



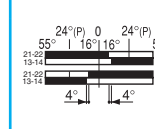
XCRB51 →



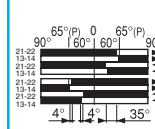
XCRB52 →



XCRB55 →



XCRF57 →



Weight lb (kg)	2.45 (1.110)	2.52 (1.145)	2.55 (1.155)	2.50 (1.135)
Contact operation	closed open			

(P) = positive opening point

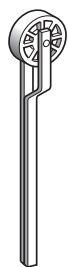
Complementary specifications

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).	

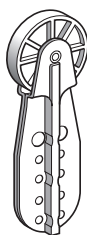
Limit switches

OsiSense™ XC Special

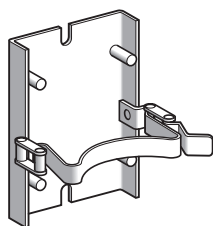
For hoisting applications, types XCR
Complete switches with 1 cable entry
Separate components



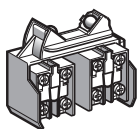
XCRZ02



XCRZ05



XCRZ09



XCRZ15



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 XCRE, XCRF	—	XCRZ09	1.15 (0.520)
		—	XCRZ12	0.30 (0.135)
Contact block (2 contacts) with mounting plate	XCRA, XCRB XCRE, 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)

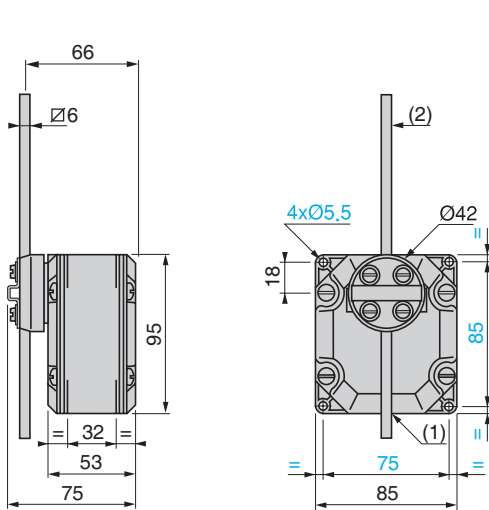
Limit switches

OsiSense™ XC Special

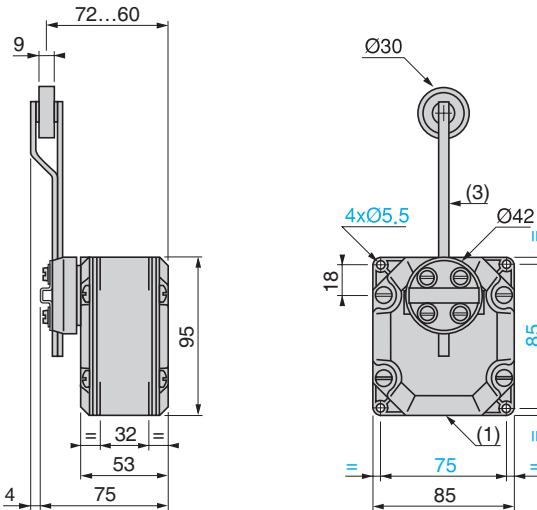
For hoisting applications, types XCR

Complete switches with 1 cable entry

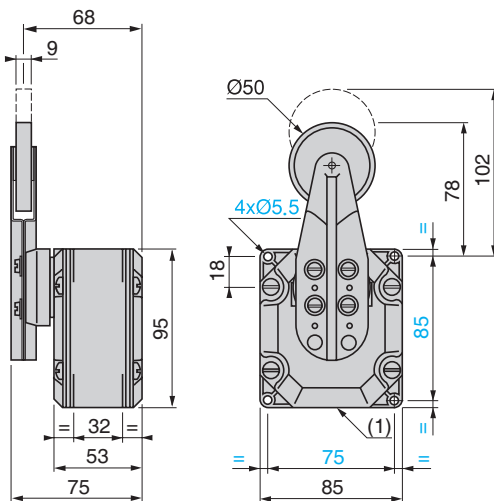
XCRA11, B11, A51, B51



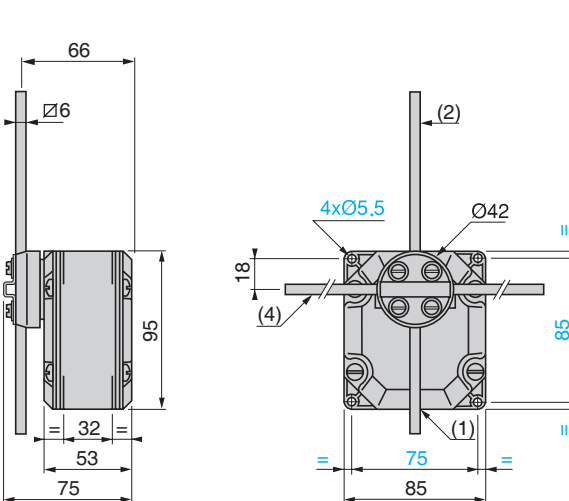
XCRA12, B12, A52, B52



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.

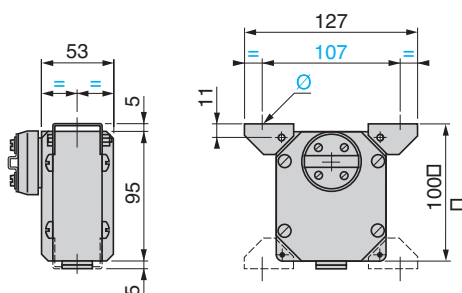
(2) Rod length: 200 mm.

(3) Rod + roller length: 160 mm.

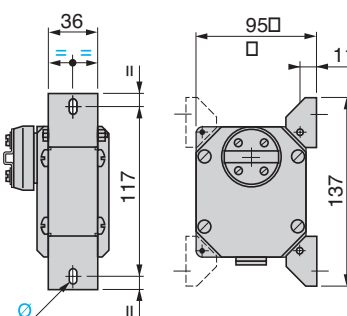
(4) Rod length: 300 mm for XCRF17 and F57, 200 mm for XCRE18 and E58.

Supplementary mounting using 2 adjustable lugs (included with switch)

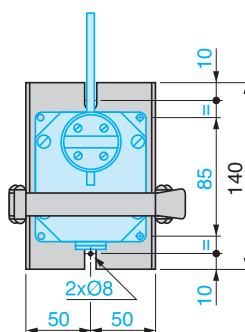
Horizontally positioned



Vertically positioned



Quick mounting/release bracket XCRZ09



Ø: 1 elongated hole Ø 6 x 8.

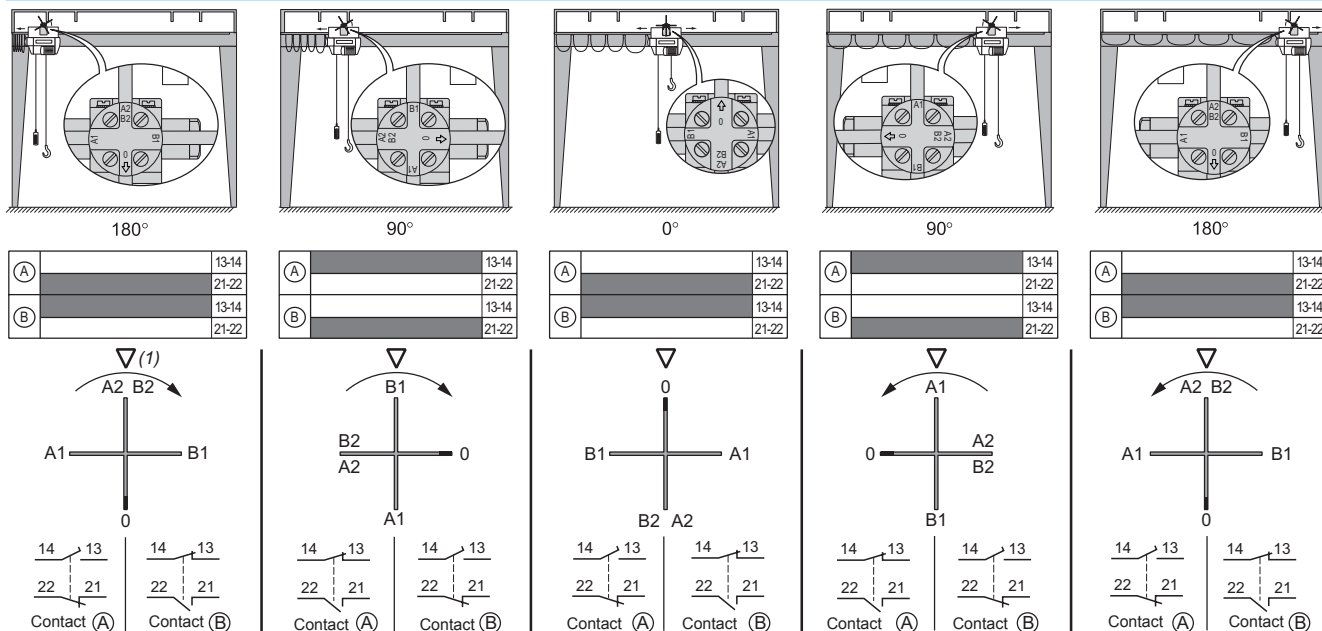
Limit switches

OsiSense™ XC Special

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

Operation

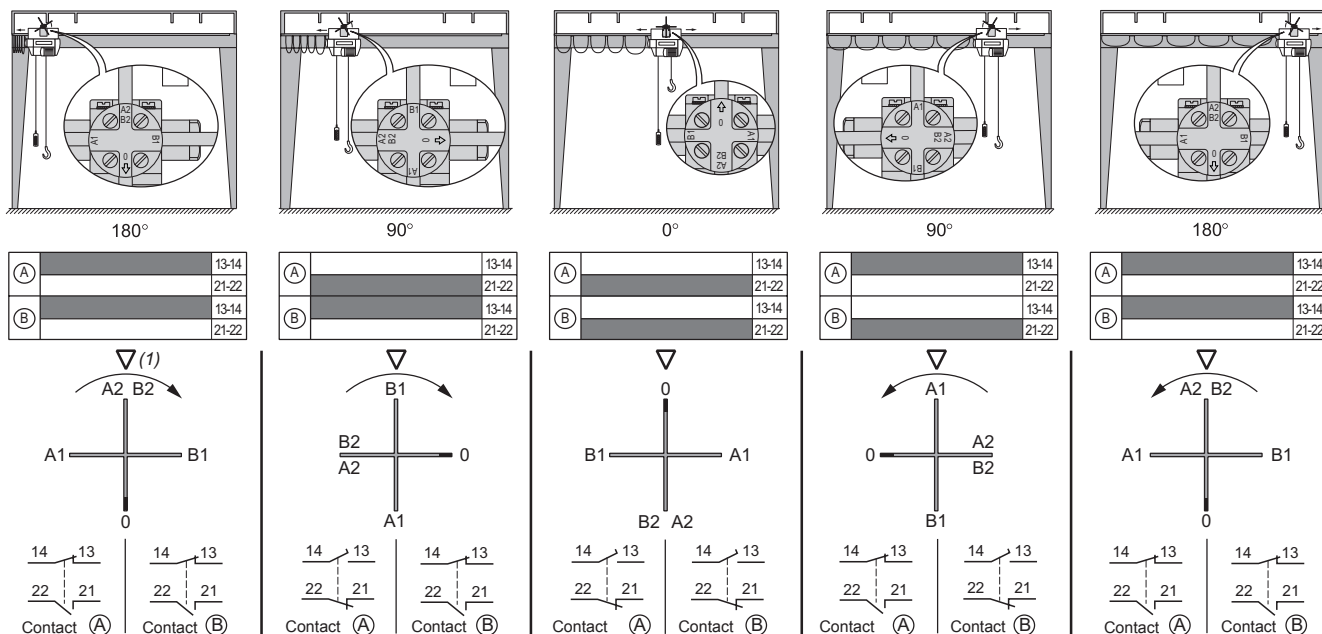
Bypass limit switches XCK●R24SR1H29



(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.

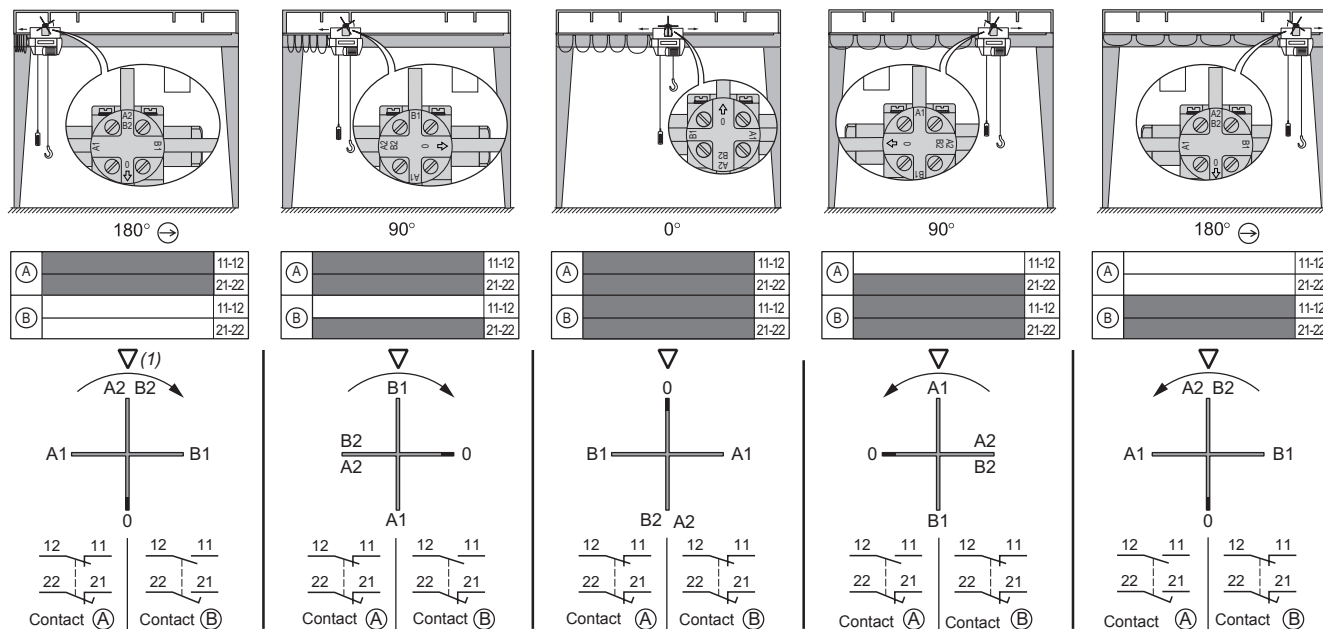
Limit switches

OsiSense™ XC Special

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

Operation (continued)

Two-speed limit switches XCK●R54D●●●●



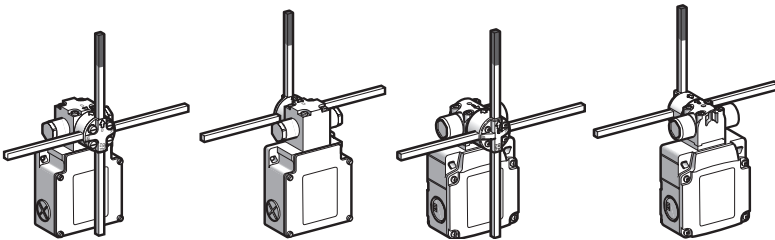
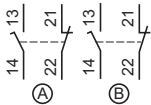
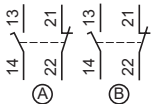
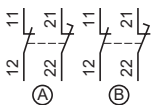
(1) Triangle symbol marked on top of head.

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	XCKVR44D2H29
Two-speed switches (⊖ NC contact with positive opening operation on contacts 21-22)					
	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)	0.71 (0.320)
Complementary specifications					
Switch actuation	Horizontal			Horizontal	
Acceptable actuation area on the rods	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	0.5 N•m		0.5 N•m	
	For positive opening	0.75 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)	
 XCRZ03	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)	
 DE9RA2012	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

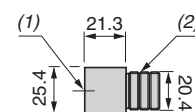
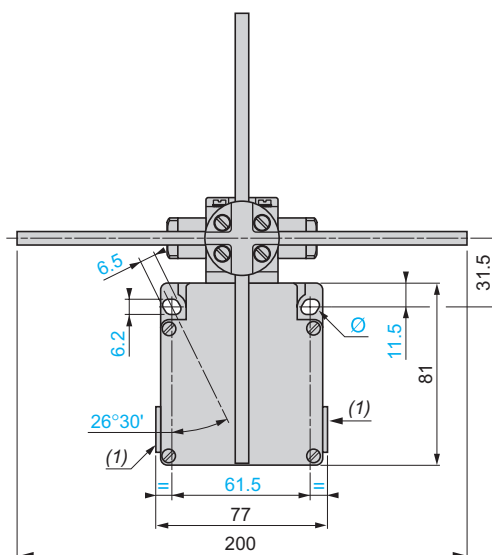
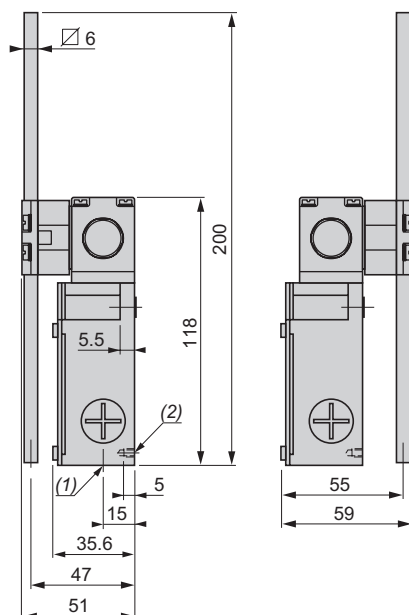
For hoisting applications, type XCKMR and XCKVR
Complete switches with 3 cable entries

Dimensions

Metal limit switches

**XCKMR24SR1H29,
XCKMR44D1H29 and
XCKMR54D1H29**

XCKMR44D2H29 and XCKMR54D2H29



DE9RA1212:

(1) 1/2"-14 NPT female threads
(2) Pg 13.5 male thread

DE9RA2012:

(1) 1/2"-14 NPT female threads
(2) ISO M20 x 1.5 male threads

(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.

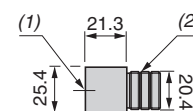
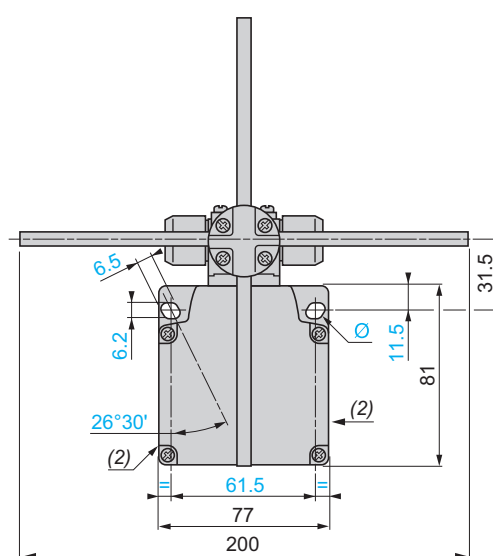
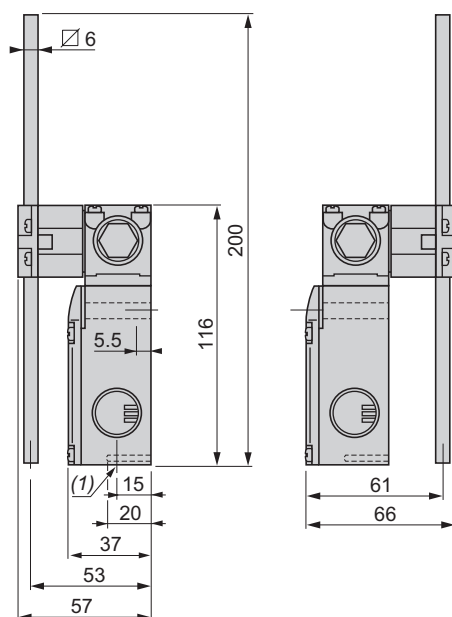
(2) 2 centering holes $\varnothing 3.9 \pm 0.2$, for cover mounting holes alignment.

Ø: 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



DE9RA2012:

(1) 1/2"-14 NPT female threads
(2) ISO M20 x 1.5 male threads

(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**).

Ø: 2 elongated holes 6.2 x 6.5, inclined at 26°30' to the vertical axis, for M5 screws.

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