

Limit switches

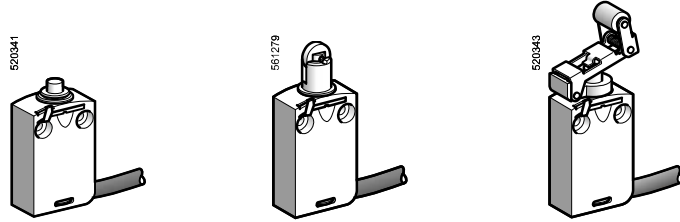
OsiSense XC Standard

Miniature design, metal, type XCM D

1

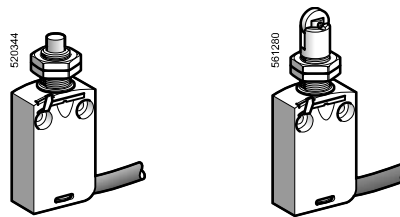
■ XCM D
pre-cabled

□ With head for linear movement (plunger). Fixing by the body



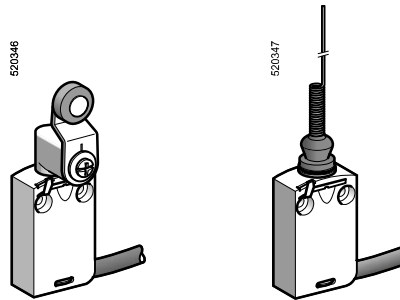
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□ With head for linear movement (plunger). Fixing by the head



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

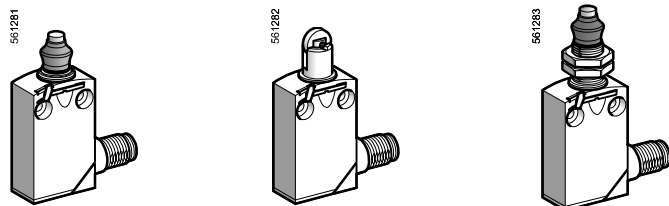


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■ XCM D
with connector

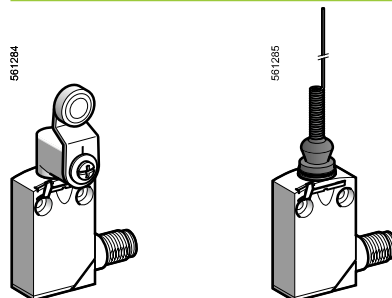
□ With head for linear movement (plunger)
Fixing by the body

Fixing by the head



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



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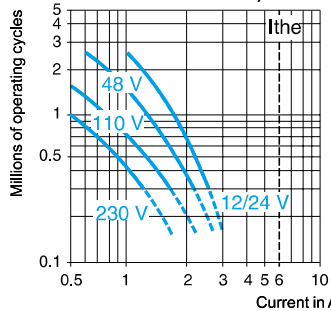
Environment characteristics		
Conformity to standards	Products	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC 60204-1, EN 60204-1
Product certifications	UL, CSA (except products with special cables), CCC	
Protective treatment	Standard version: "TC"	
Ambient air temperature	For operation: - 25... + 70°C. For storage: - 40... + 70°C	
Vibration resistance	XCM D snap action: 5 gn. XCM D slow break: 25 gn (10...500 Hz) conforming to IEC 60068-2-6	
Shock resistance	25 gn (18 ms) conforming to IEC 60068-2-27 except head ZCE 08: 15 gn (18 ms)	
Electric shock protection	Class I conforming to IEC 61140 and NF C 20-030	
Degree of protection	IP 66, IP 67 and IP 68 (1) conforming to IEC 60529; IK 06 conforming to EN 50102	
Materials	Bodies: zamak, heads: zamak	
Repeat accuracy	0.05 mm on the tripping points, with 1 million operations for head with end plunger	

(1) Protection against prolonged immersion: the test conditions are subject to agreement between the manufacturer and the user.

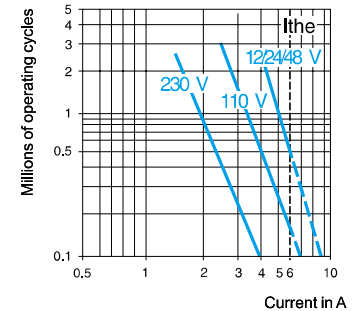
Contact block characteristics		
Rated operational characteristics	Switches with 2 contacts	~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A) ::: DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	Switches with 3 and 4 contacts	~ AC-15; C300 (Ue = 240 V, Ie = 0.75 A) ::: DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60947-5-1 Appendix A, EN 60947-5-1
	Pre-cabled switches	Ithe = 6 A for 2 contacts, 4 A for 3 contacts, 3 A for 4 contacts
	Switches with M12, 4-pin connector	Ui = 250 V, Ie = 3 A maximum, Ithe = 3 A
	Switches with M12, 5-pin connector	Ui = 60 V, Ie = 4 A maximum, Ithe = 4 A
	Switches with 7/8"-16UN, 5-pin connector	Ui = 250 V, Ie = 6 A maximum, Ithe = 6 A
Rated insulation voltage	Ui = 400 V degree of pollution 3 conforming to IEC 60947-5-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14	
Rated impulse withstand voltage	U imp = 4 kV conforming to IEC 60947-1, IEC 60664	
Positive operation (depending on model)	NC contacts with positive opening operation conforming to IEC 60947-5-1 Appendix K, EN 60947-5-1	
Resistance across terminals	≤ 25 mΩ conforming to IEC 60255-7 category 3	
Short-circuit protection	6 A cartridge fuse type gG (gl)	
Minimum actuation speed (for head with end plunger)	Snap action contact: 0.01 m/minute, slow break contact: 6 m/minute	
Electrical durability	<ul style="list-style-type: none"> ■ Conforming to IEC 60947-5-1 Appendix C ■ Utilisation categories AC-15 and DC-13 ■ Maximum operating rate: 3600 operating cycles/hour ■ Load factor: 0.5 	

AC supply
50/60 Hz ~
~m inductive circuit

XCM D snap action (NC + NO, NC + NC, NC + NC + NO, NC + NC + NO + NO contacts)



XCM D slow break (NC + NO, NC + NC + NO contacts)



DC supply ~::

Power broken in W for 5 million operating cycles				
Voltage	V	24	48	120
~m	W	3	2	1

Power broken in W for 5 million operating cycles				
Voltage	V	24	48	120
~m	W	4	3	3

1

Type of head	Plunger (fixing by the body)				Plunger (fixing by the head)		
Type of operator	Metal end plunger	Metal end plunger with elastomer boot (1)	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot	M12 with steel roller plunger

References							
2-pole NC + NO snap action	XCM D2110L1 	XCM D2111L1 	XCM D2102L1 	XCM D2124L1 	XCM D21F0L1 	XCM D21G1L1 	XCM D21F2L1
2-pole NC + NO break before make, slow break	XCM D2510L1 	XCM D2511L1 	XCM D2502L1 	XCM D2524L1 	XCM D25F0L1 	XCM D25G1L1 	XCM D25F2L1
2-pole NC + NC snap action	ZCM D29L1 + ZCE 10 	ZCM D29L1 + ZCE 11 	ZCM D29L1 + ZCE 02 	ZCM D29L1 + ZCE 24 	ZCM D29L1 + ZCE F0 	ZCM D29L1 + ZCE G1 	ZCM D29L1 + ZCE F2
3-pole NC + NC + NO snap action	ZCM D39L1 + ZCE 10 	ZCM D39L1 + ZCE 11 	ZCM D39L1 + ZCE 02 	ZCM D39L1 + ZCE 24 	ZCM D39L1 + ZCE F0 	ZCM D39L1 + ZCE G1 	ZCM D39L1 + ZCE F2
3-pole NC + NC + NO break before make, slow break	ZCM D37L1 + ZCE 10 	ZCM D37L1 + ZCE 11 	ZCM D37L1 + ZCE 02 	ZCM D37L1 + ZCE 24 	ZCM D37L1 + ZCE F0 	ZCM D37L1 + ZCE G1 	ZCM D37L1 + ZCE F2
Weight (kg)	0.180	0.180	0.185	0.200	0.195	0.220	0.205
4-pole NC + NC + NO + NO snap action	ZCM D41L1 + ZCE 10 	ZCM D41L1 + ZCE 11 	ZCM D41L1 + ZCE 02 	ZCM D41L1 + ZCE 24 	ZCM D41L1 + ZCE F0 	ZCM D41L1 + ZCE G1 	ZCM D41L1 + ZCE F2
Weight (kg)	0.160	0.160	0.165	0.180	0.175	0.200	0.185
Contact operation	closed open		(A) = cam displacement (P) = positive opening point		NC contact with positive opening operation		
Characteristics							
Switch actuation	On end		By 30° cam		On end		By 30° cam
Type of actuation							
Maximum actuation speed	0.5 m/s						0.1m/s
Mechanical durability	10 million operating cycles						
Minimum force or torque	For tripping	8.5 N	7 N	2.5 N	8.5 N	7 N	
	For positive opening	42.5 N	35 N	12.5 N	42.5 N	35 N	
Cabling	PvR cable, 5 x 0.75 mm ² , length 1 metre for 2-pole contact versions, 7 x 0.5 mm ² , length 1 metre for 3-pole contact versions, 9 x 0.34 mm ² , length 1 metre for 4-pole contact versions. For other lengths see page 1/24.						

(1) Nitrile for indoor use.

Limit switches

OsiSense XC Standard
Miniature design, metal, type XCM D
Pre-cabled

Type of head	Rotary (fixing by the body)				Multi-directional
Type of operator	Thermoplastic roller lever	Steel roller lever	Roller lever with ball bearing mounted roller	Variable length thermoplastic roller lever	"Cat's whisker" (1)

References

2-pole NC + NO snap action 	XCM D2115L1 	XCM D2116L1 	XCM D2117L1 	XCM D2145L1 	XCM D2106L1
2-pole NC + NO break before make, slow break 	XCM D2515L1 	XCM D2516L1 	XCM D2517L1 	XCM D2545L1 	XCM D2506L1
2-pole NC + NC snap action 	ZCM D29L1 + ZCE 01 + ZCY 15 	ZCM D29L1 + ZCE 01 + ZCY 16 	ZCM D29L1 + ZCE 01 + ZCY 17 	ZCM D29L1 + ZCE 01 + ZCY 45 	ZCM D29L1 + ZCE 06
3-pole NC + NC + NO snap action 	ZCM D39L1 + ZCE 01 + ZCY 15 	ZCM D39L1 + ZCE 01 + ZCY 16 	ZCM D39L1 + ZCE 01 + ZCY 17 	ZCM D39L1 + ZCE 01 + ZCY 45 	ZCM D39L1 + ZCE 06
3-pole NC + NC + NO break before make, slow break 	ZCM D37L1 + ZCE 01 + ZCY 15 	ZCM D37L1 + ZCE 01 + ZCY 16 	ZCM D37L1 + ZCE 01 + ZCY 17 	ZCM D37L1 + ZCE 01 + ZCY 45 	ZCM D37L1 + ZCE 06
Weight (kg)	0.220	0.225	0.220	0.230	0.180
4-pole NC + NC + NO + NO snap action 	ZCM D41L1 + ZCE 01 + ZCY 15 	ZCM D41L1 + ZCE 01 + ZCY 16 	ZCM D41L1 + ZCE 01 + ZCY 17 	ZCM D41L1 + ZCE 01 + ZCY 45 	ZCM D41L1 + ZCE 06
Weight (kg)	0.200	0.205	0.200	0.210	0.160
Contact operation					

(1) Value taken with actuation by moving part at 100 mm from the fixing.

Characteristics

Switch actuation	By 30° cam		By any moving part
Type of actuation			
Maximum actuation speed	1.5 m/s		1 m/s
Mechanical durability	10 million operating cycles		5
Minimum force or torque	For tripping	0.1 N.m	
	For positive opening	0.5 N.m	
Cabling	PvR cable, 5 x 0.75 mm ² , length 1 metre for 2-pole contact versions, 7 x 0.5 mm ² , length 1 metre for 3-pole contact versions, 9 x 0.34 mm ² , length 1 metre for 4-pole contact versions. For other lengths see page 1/24.		

Limit switches

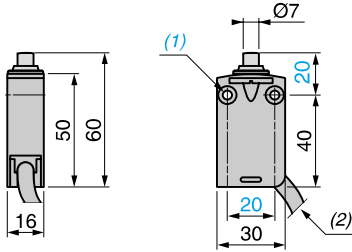
OsiSense XC Standard

Miniature design, metal, type XCM D

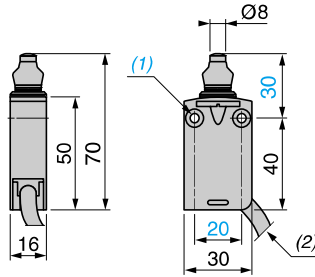
Pre-cabled

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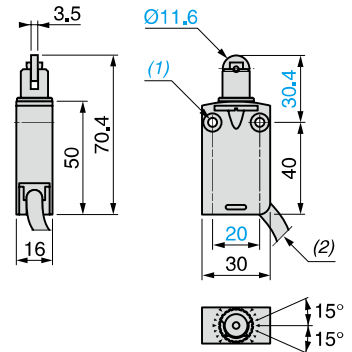
XCM D2•10L1



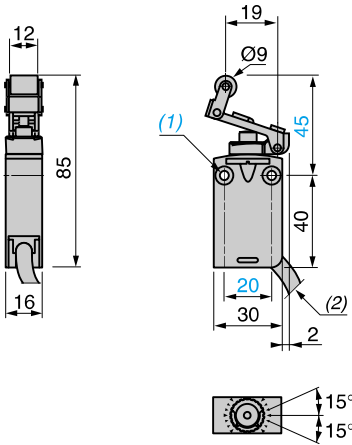
XCM D2•11L1



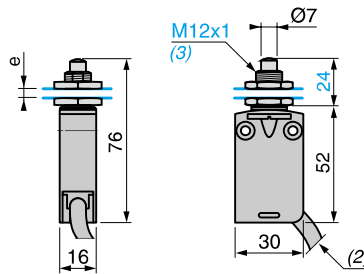
XCM D2•02L1



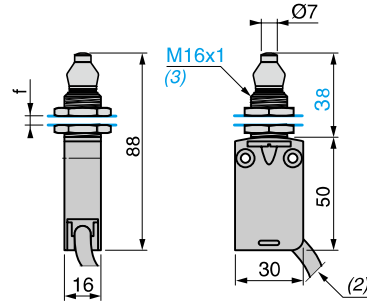
XCM D2•24L1



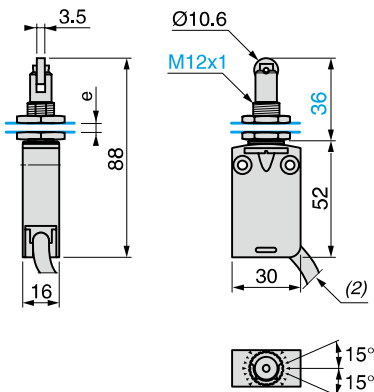
XCM D2•F0L1



XCM D2•G1L1



XCM D2•F2L1



(1) 2 fixing holes \varnothing 4.2 mm, counterbored \varnothing 8 mm by 4 mm deep.

(2) External diameter of cable 7.5 mm.

(3) Fixing nut thickness 3.5 mm.

e: 8 mm max, panel cut-out \varnothing 12.5 mm.

f: 8 mm max, panel cut-out \varnothing 16.5 mm.

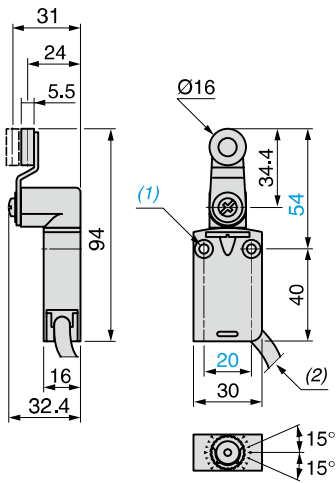
Limit switches

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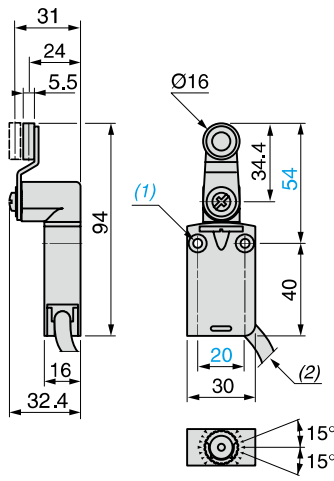
Miniature design, metal, type XCM D

Pre-cabled

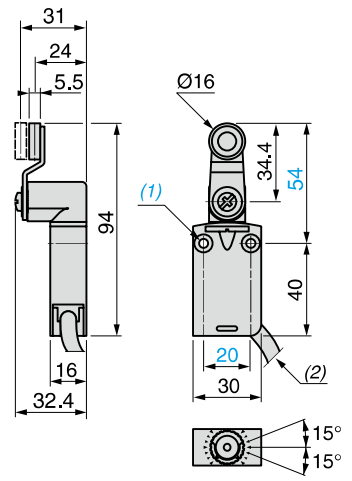
XCM D2●15L1



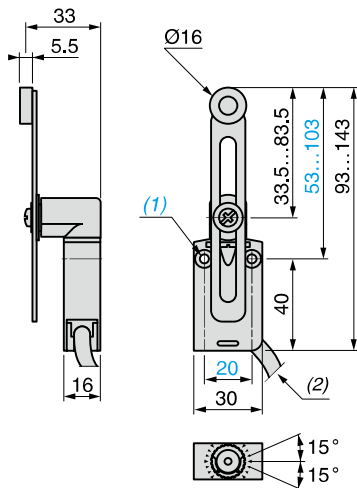
XCM D2●16L1



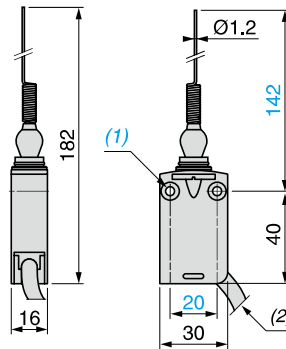
XCM D2●17L1



XCM D2●45L1



XCM D2●06L1



(1) 2 fixing holes \varnothing 4.2 mm, counterbored \varnothing 8 mm by 4 mm deep.

(2) External diameter of cable 7.5 mm.

e: 8 mm max, panel cut-out \varnothing 12.5 mm.

f: 8 mm max, panel cut-out \varnothing 16.5 mm.

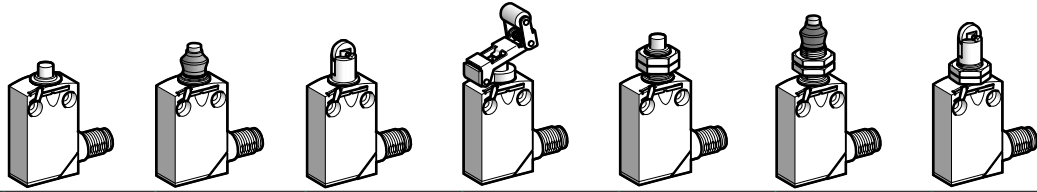
Limit switches

OsiSense XC Standard

Miniature design, metal, type XCM D Connector

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Type of head	Plunger (fixing by the body)	Plunger (fixing by the head)
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Type of operator	Metal end plunger	Metal end plunger with elastomer boot (1)	Steel roller plunger	Retractable steel roller lever plunger	M12 with metal end plunger	M16 with metal end plunger with elastomer boot (1)	M12 with steel roller plunger
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References

	Single-pole CO snap action + integral M12 4-pin connector	XCM D2110M12	XCM D2111M12	XCM D2102M12	XCM D2124M12	XCM D21F0M12	XCM D21G1M12	XCM D21F2M12
	2-pole NC + NO snap action + integral M12 5-pin connector	XCM D2110C12	XCM D2111C12	XCM D2102C12	XCM D2124C12	XCM D21F0C12	XCM D21G1C12	XCM D21F2C12
	2-pole NC + NC snap action + integral M12 5-pin connector	ZCM D29C12 + ZCE 10	ZCM D29C12 + ZCE 11	ZCM D29C12 + ZCE 02	ZCM D29C12 + ZCE 24	ZCM D29C12 + ZCE F0	ZCM D29C12 + ZCE G1	ZCM D29C12 + ZCE F2
	2-pole NC + NO snap action + M12 5-pin connector on 0.8 m flying lead	ZCM D21L08R12 + ZCE 10	ZCM D21L08R12 + ZCE 11	ZCM D21L08R12 + ZCE 02	ZCM D21L08R12 + ZCE 24	ZCM D21L08R12 + ZCE F0	ZCM D21L08R12 + ZCE G1	ZCM D21L08R12 + ZCE F2
	2-pole NC + NO snap action + 7/8"-16UN 5-pin connector on 0.8 m flying lead	ZCM D21L08U78 + ZCE 10	ZCM D21L08U78 + ZCE 11	ZCM D21L08U78 + ZCE 02	ZCM D21L08U78 + ZCE 24	ZCM D21L08U78 + ZCE F0	ZCM D21L08U78 + ZCE G1	ZCM D21L08U78 + ZCE F2
Weight (kg)		0.085	0.085	0.090	0.105	0.100	0.125	0.110
Contact operation		■ closed □ open		(A) = cam displacement (P) = positive opening point		⊖ NC contact with positive opening operation		

Characteristics

Switch actuation	On end	By 30° cam		On end	By 30° cam
Type of actuation					
Maximum actuation speed	0.5 m/s				0.1 m/s
Mechanical durability	10 million operating cycles				
Minimum force or torque	For tripping	8.5 N	7 N	2.5 N	8.5 N
	For positive opening	42.5 N	35 N	12.5 N	42.5 N
Positive operation	Although their design is identical to the pre-cabled switches, the switches incorporating an M12 4-pin connector cannot be marked with the ⊖ symbol because they are single-pole CO.				

(1) Nitrile for indoor use.

1

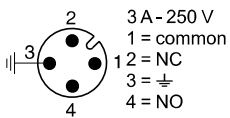
References of suitable pre-wired female connectors

Type of connector		M12 straight, 4-pin 4 A, 250 V	M12 straight, 5-pin 4 A, 24 V	M12 elbowed, 5-pin 4 A, 24 V	7/8"-16 UN straight, 5-pin, 6 A, 250 V
With cable	L = 2 m	XZ CP1169L2	XZ CP1164L2	XZ CP1264L2	XZ CP1771L2
	L = 5 m	XZ CP1169L5	XZ CP1164L5	XZ CP1264L5	XZ CP1771L5
	L = 10 m	XZ CP1169L10	XZ CP1164L10	XZ CP1264L10	XZ CP1771L10
Weight (kg)		0.105	0.115	0.115	0.190

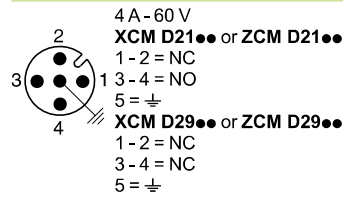
Connections

XCM D with connector

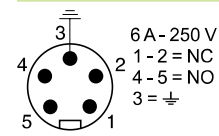
4-pin, M12



5-pin, M12

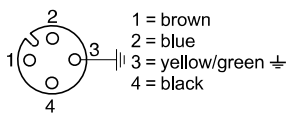


5-pin, 7/8"-16UN

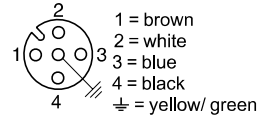


Pre-wired female connectors XZ CP

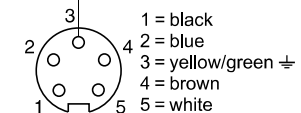
4-pin, M12



5-pin, M12

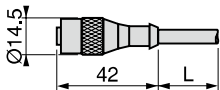


5-pin, 7/8"-16UN

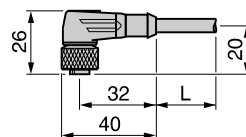


Dimensions

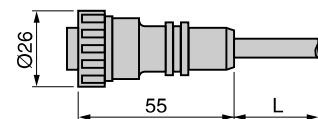
XZ CP116●L●



XZ CP1264L●



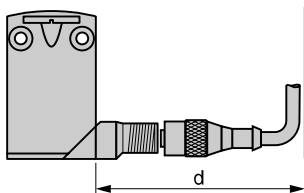
XZ CP1771L●



L: cable length 2, 5 or 10 m.

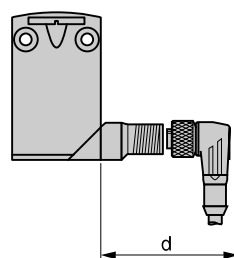
Distances required for plug-in connectors

M12 straight connector



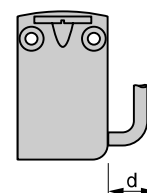
d: min. 65 mm, recommended 69 mm

M12 elbowed connector



d: min. 42 mm, recommended 45 mm

Connector on flying lead



d: min. 20 mm

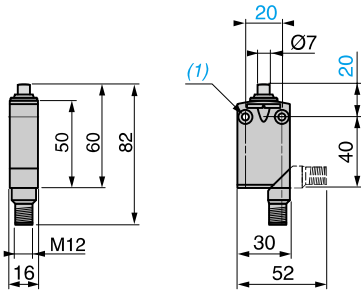
Limit switches

OsiSense XC Standard

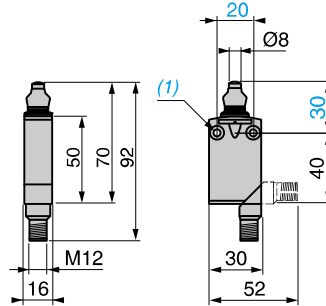
Miniature design, metal, type XCM D

Connector

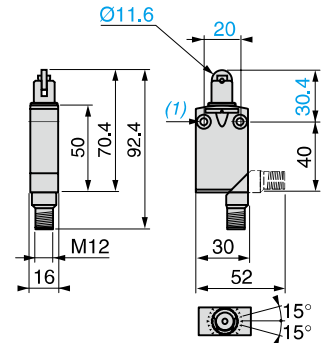
XCM D2•10M12



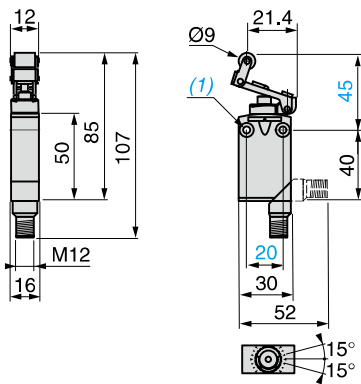
XCM D2•11M12



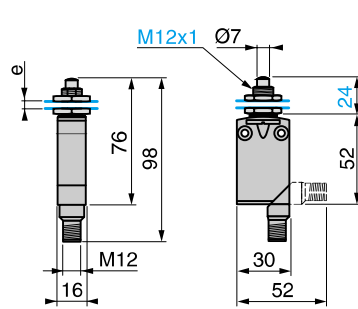
XCM D2•02M12



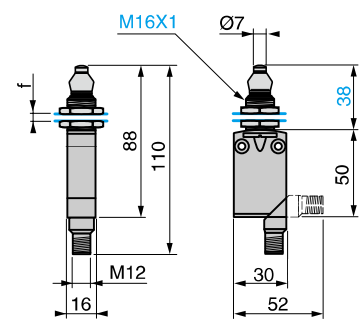
XCM D2•24M12



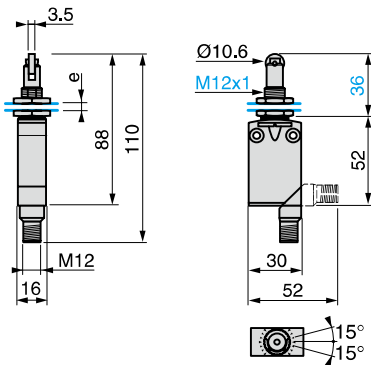
XCM D2•F0M12



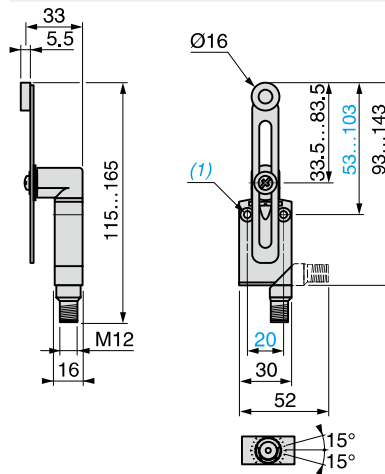
XCM D2•G1M12



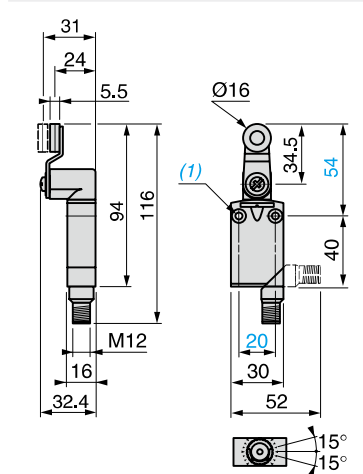
XCM D2•F2M12



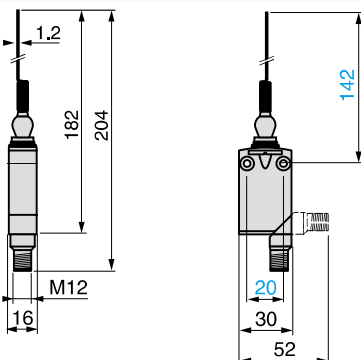
XCM D2•45M12



XCM D2•15M12/•16M12/•17M12



XCM D2•06M12



(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.
 e: 8 mm max., panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.
 f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

Limit switches

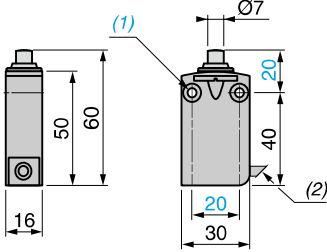
OsiSense XC Standard

Miniature design, metal, type XCM D

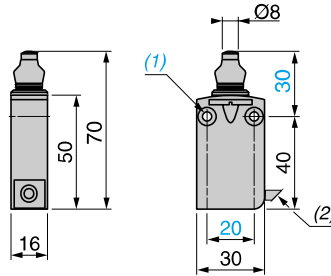
Connector

1

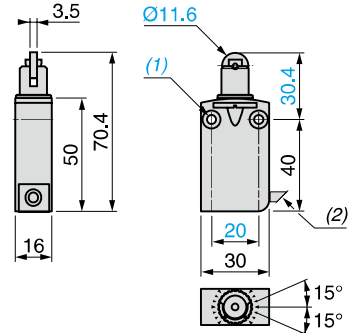
ZCM D21L08●●● + ZCE 10



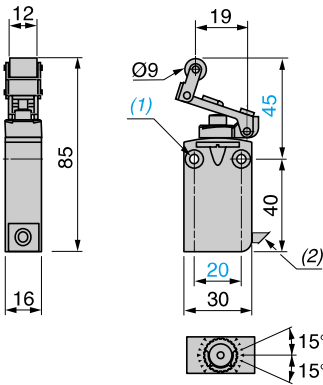
ZCM D21L08●●● + ZCE 11



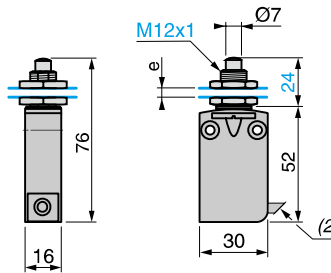
ZCM D21L08●●● + ZCE 02



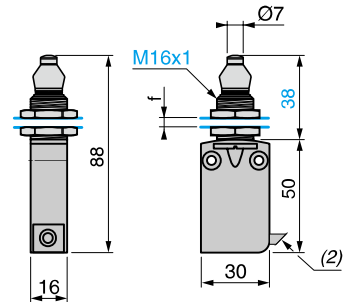
ZCM D21L08●●● + ZCE 24



ZCM D21L08●●● + ZCE F0



ZCM D21L08●●● + ZCE G1



(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.

(2) External diameter 7.5 mm.

e: 8 mm max., panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.

f: 8 mm max., panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

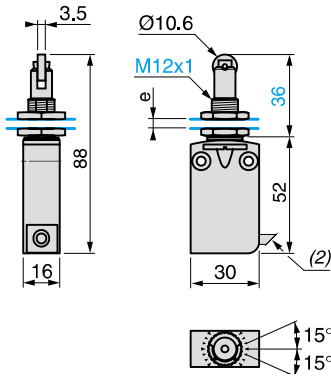
Limit switches

OsiSense XC Standard

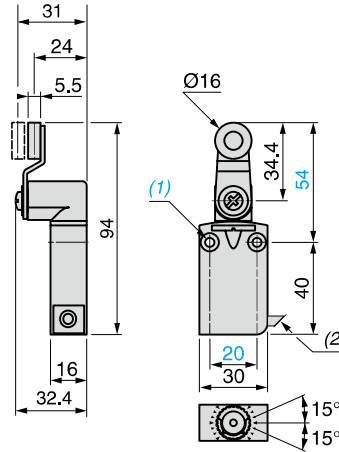
Miniature design, metal, type XCM D

Connector

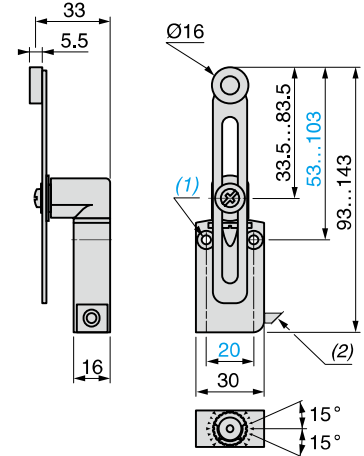
ZCM D21L08●●● + ZCE F2



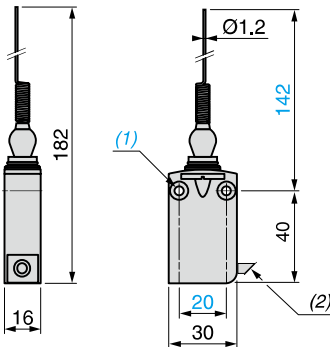
ZCM D21L08●●● + ZCE 01 + ZCY 15/16/17



ZCM D21L08●●● + ZCE 01 + ZCY 45



ZCM D21L08●●● + ZCE 06



(1) 2 fixing holes Ø 4.2 mm, counterbored Ø 8 mm by 4 mm deep.

(2) External diameter 7.5 mm.

e: 8 mm max, panel cut-out Ø 12.5 mm, fixing nut thickness 3.5 mm.

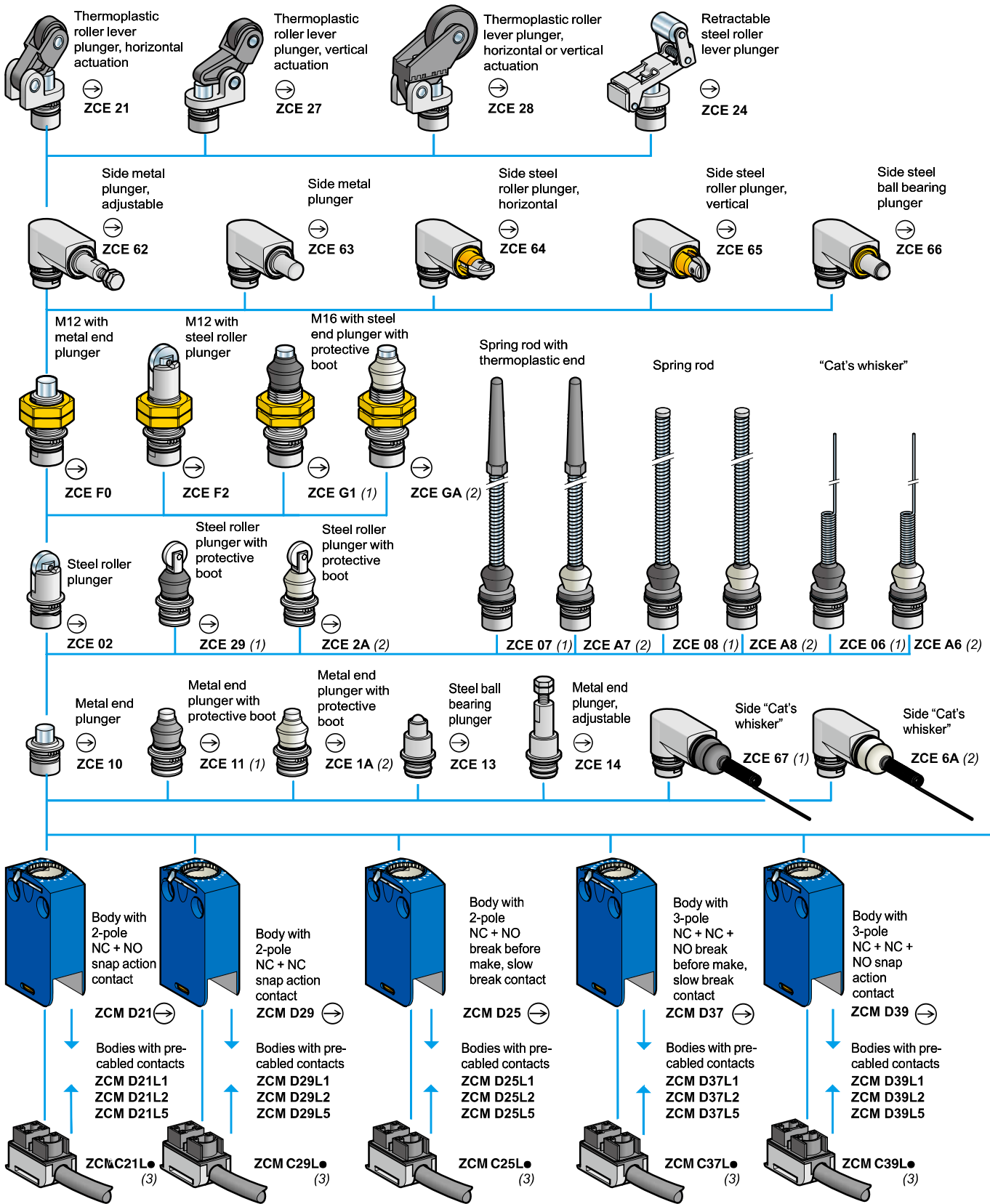
f: 8 mm max, panel cut-out Ø 16.5 mm, fixing nut thickness 3.5 mm.

Limit switches

OsiSense XC Standard

Miniature design, metal, type XCM D
Variable composition

1



(1) Nitrile boot for indoor use.

(2) Silicone boot for outdoor use.

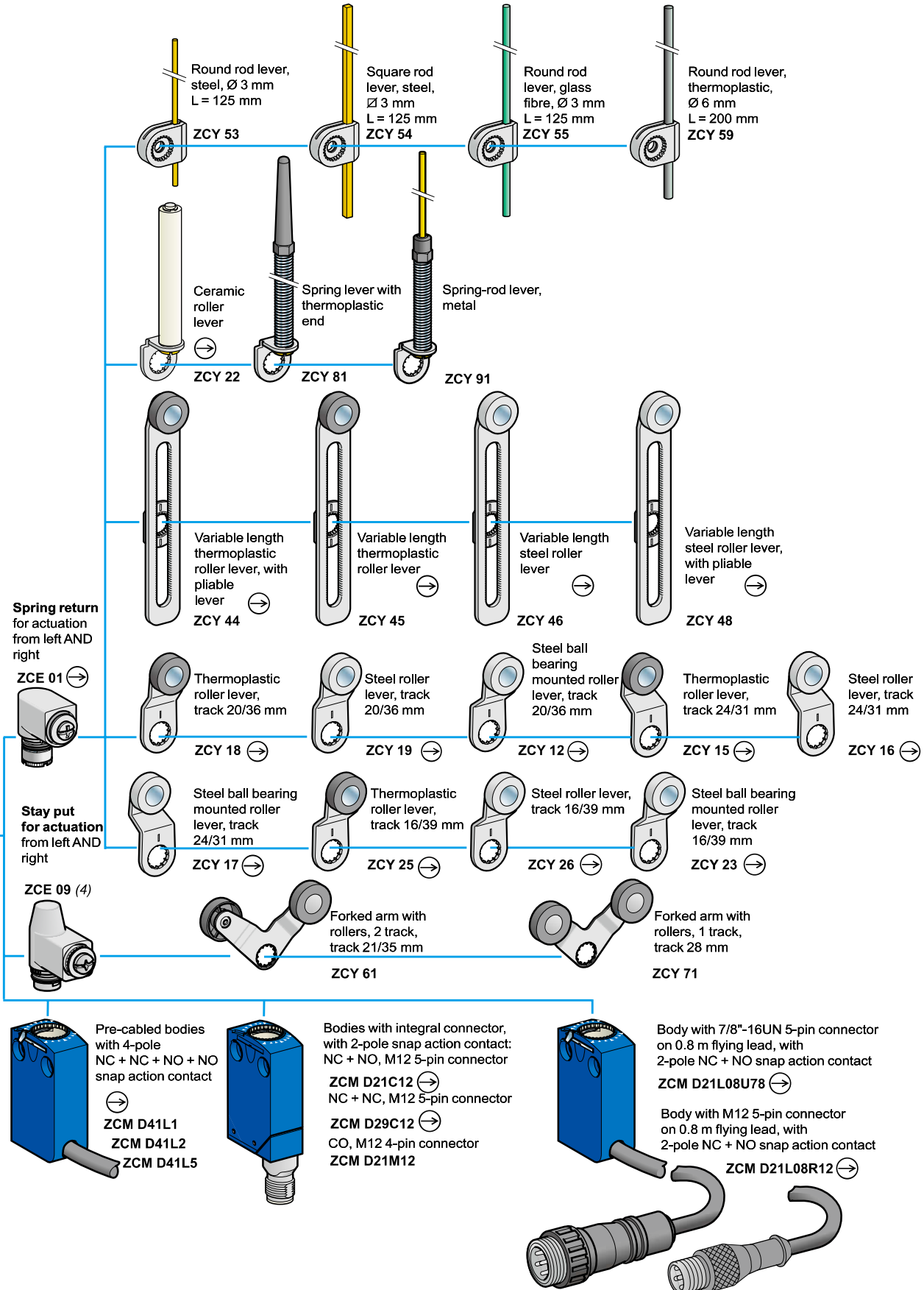
(3) Pre-cabled connection components: replace the "●" in the reference by the required cable length in metres, either: 1, 2, 3, 5, 7 or 10.

Example: ZCM C21L● becomes ZCM C21L7 for a 7 metre long cable.

Note: Only cable lengths of 1, 2 and 5 metres are available for pre-cabled connection components ZCM C37L● and ZCM C39L●.

Limit switches

OsiSense XC Standard
Miniature design, metal, type XCM D
Variable composition



(4) Suitable with bodies ZCM D21, ZCM D29, ZCM D39, ZCM D41, ZCM D21C12, ZCM D21M12, ZCM D29C12, ZCM D21L08...

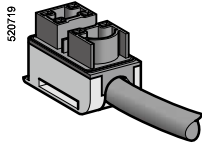
Limit switches

OsiSense XC Standard

Miniature design, metal, type XCM D

Separate components

1



ZCM C21E●

Pre-cabled connection components with CEI cable

(Connitato Elettrotecnico Italiano) (1)

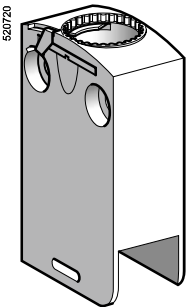
Type of contact	Scheme	Length of CEI cable in metres	Reference	Weight kg
2-pole				
NC + NO snap action		1	ZCM C21E1	0.100
		2	ZCM C21E2	0.190
		3	ZCM C21E3	0.280
		5	ZCM C21E5	0.440
		7	ZCM C21E7	0.700
		10	ZCM C21E10	0.970

Pre-cabled connection components with halogen free cable

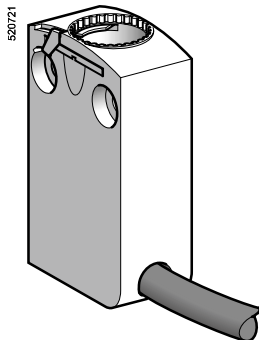
Type of contact	Positive operation (3)	Scheme	Length of cable in metres	Reference	Weight kg
2-pole					
NC + NO break before make, slow break			0.6	ZCM C25T06	0.080

Bodies with gold contacts

Type of contact	Positive operation (3)	Scheme	Length of cable in metres	Reference	Weight kg
2-pole					
NC + NO snap action			-	ZCM D61	0.055
NC + NC snap action			-	ZCM D69	0.055
NC + NO break before make, slow break			-	ZCM D65	0.055
3-pole					
NC + NC + NO snap action			-	ZCM D79	0.055
NC + NC + NO break before make, slow break			-	ZCM D77	0.055
4-pole					
NC + NC + NO + NO snap action			1	ZCM D81L1	0.160
			2	ZCM D81L2	0.255
			5	ZCM D81L5	0.525



ZCM D6●
ZCM D7●



ZCM D81L●

(1) Cable not UL, CSA certified.

(2) Other types of contacts and cable possible. Please consult our Customer Care Centre.

(3) bodies with contacts assuring positive opening operation.

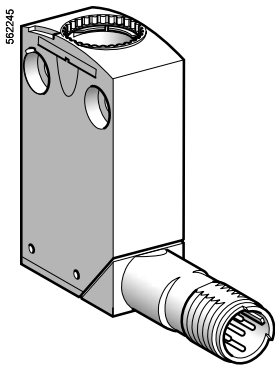
Limit switches

OsiSense XC Standard

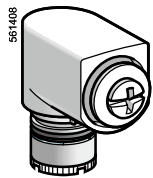
Miniature design, metal, type XCM D

Separate components

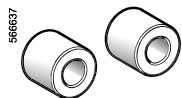
1



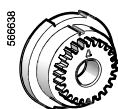
ZCM D61●●●



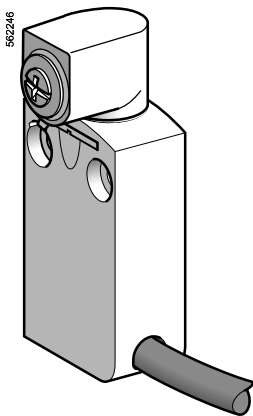
ZCE 05



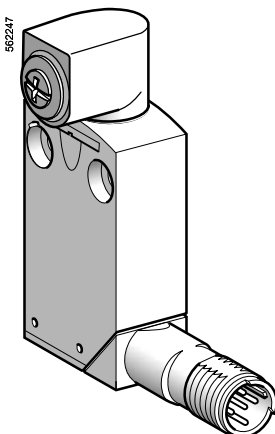
XCM Z06



XCM Z07



XCM D201L1



XCM D210L12

Bodies with gold contacts, connector

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
2-pole					
NC + NO snap action	—		M12, 5-pin	ZCM D61C12	0.065
NC + NC snap action	—		M12, 5-pin	ZCM D69C12	0.065
Single-pole					
CO snap action	—		M12, 4-pin	ZCM D61M12	0.065

Accessories

Description	Positive operation (1)	Suitable levers for use with head	Reference	Weight kg
Rotary head, without lever, spring return, for actuation from left AND right or from left OR right (2)		ZCY 12, ZCY 15, ZCY 16, ZCY 17, ZCY 18, ZCY 19, ZCY 22, ZCY 23, ZCY 25, ZCY 26, ZCY 39, ZCY 53, ZCY 54, ZCY 55, ZCY 81	ZCE 05	0.045
Spacer for mounting multi-track XCM D	—	—	XCM Z06	0.005
Spacer for angular positioning – of heads with adjustable levers, for values other than - 90°, 0° and 90°	—	—	XCM Z07	0.005

Bodies with contacts, with rotary head (without operating lever), pre-cabled

Type of contact	Positive operation (1)	Scheme	Length of cable in metres	Reference	Weight kg
2-pole					
NC + NO snap action			1	XCM D2101L1	0.180
NC + NO break before make, slow break			1	XCM D2501L1	0.180

Bodies with contacts, with rotary head (without operating lever), connector

Type of contact	Positive operation (1)	Scheme	Connector	Reference	Weight kg
2-pole					
NC + NO snap action			M12, 5-pin	XCM D2101C12	0.110
Single-pole					
CO snap action	—		M12, 4-pin	XCM D2101M12	0.110

(1) bodies with contacts or head assuring positive opening operation.

(2) For programming see page 1/170.