Preventa safety solutions

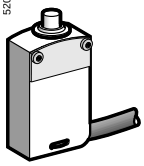
Limit switches

Miniature design, type XCS-M, metal

■ **XCS-M**
pre-cabled

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

520576



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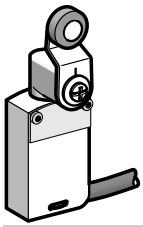
□ **With head for rotary movement (lever). Fixing by the body.**

520577



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Preventa safety solutions
Limit switches
Miniature design, type XCS-M, metal

Environment

Conforming to standards	Products	IEC 60 947-5-1, EN 60 947-5-1, UL 508, CSA C22-2 n° 14
	Machine assemblies	IEC 60 204-1, EN 60 204-1, EN 1088
Product certifications		UL, CSA (Except products with special cables)
Protective treatment		Standard version: "TC"
Ambient air temperature		Operation: - 25...+ 70 °C. Storage: - 40…+ 70 °C
Vibration resistance		XCS-M snap action: 5 gn. XCS-M 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
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 60 529; IK 06 conforming to EN 50 102**
Materials		Body: zamak, heads: zamak, fixings: 5-lobe torque
Repeat accuracy		0.05 mm on the tripping points

Contact block characteristics

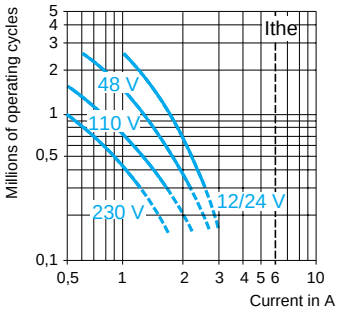
Rated operational characteristics	**~ AC-15; B300 (Ue = 240 V, Ie = 1.5 A)** **⎓ DC-13; R300 (Ue = 250 V, Ie = 0.1 A), conforming to IEC 60 947-5-1 Appendix A, EN 60 947-5-1**
Rated insulation voltage	Ui = 400 V degree of pollution 3 conforming to IEC 60 947-5-1 Ui = 300 V conforming to UL 508, CSA C22-2 n° 14
Rated impulse withstand voltage	U imp = 4 kV conforming to IEC 60 947-1, IEC 60 664
Positive opening operation (depending on model)	N/C contacts with positive opening operation conforming to IEC 60 947-5-1 Appendix K, EN 60 947-5-1
Resistance across terminals	≤ 25 mΩ conforming to IEC 60 255-7 category 3
Short-circuit protection	6 A cartridge fuse type gG (gl)
Minimum actuation speed	N/C + N/O snap action contact: 0.01 m/minute, N/C + N/O break before make, slow break contact: 6 m/minute

Electrical durability

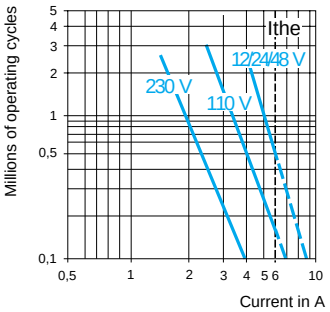
- Conforming to IEC 60 947-5-1 Appendix C
- Utilisation categories AC-15 and DC-13
- Maximum operating rate: 3600 operating cycles/hour
- Load factor: 0.5

a.c. supply
~ 50/60 Hz
∩∩∩ inductive circuit

XCS-M snap-action (N/C + N/C + N/O, N/C + N/C + N/O + N/O contact)



XCS-M slow break (N/C + N/C + NO contact)



d.c. supply ⎓

Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
∩∩∩	W	3	2	1

Power broken in W for 5 million operating cycles

Voltage	V	24	48	120
∩∩∩	W	4	3	3

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

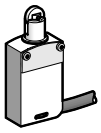
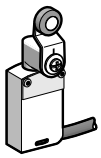
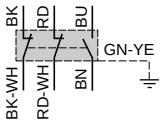
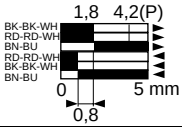
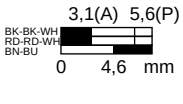
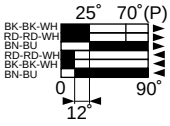
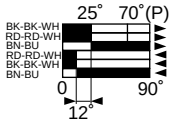
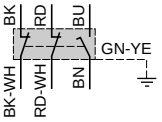
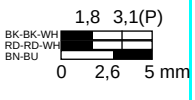
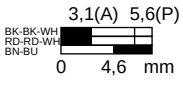
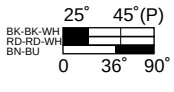
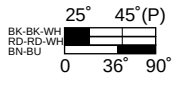
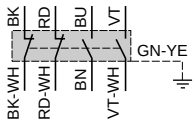
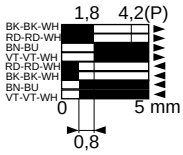
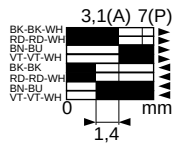
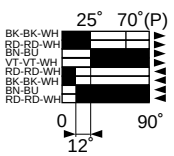
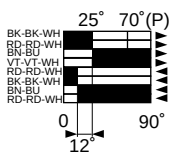
Preventa safety solutions

Limit switches

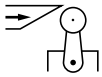
Miniature design, type XCS-M, metal

Pre-cabled

2

Type of head	Plunger (fixing by the body)		Rotary (fixing by the body)	
				
Type of operator	Metal end plunger	Roller plunger	Thermoplastic roller lever	Steel roller lever
References				
3-pole N/C + N/C + N/O snap-action 	**XCS-M3910L1** 	**XCS-M3902L1** 	**XCS-M3915L1** 	**XCS-M3916L1** 
3-pole N/C + N/C + N/O break before make, slow break 	**XCS-M3710L1** 	**XCS-M3702L1** 	**XCS-M3715L1** 	**XCS-M3716L1** 
4-pole N/C + N/C + N/O + N/O snap-action 	**XCS-M4110L1** 	**XCS-M4102L1** 	**XCS-M4115L1** 	**XCS-M4116L1** 
Weight (kg)	0.165	0.170	0.205	0.210
Contact operation	*contact closed* *contact open*		*(A) = cam displacement* *(P) = positive opening point* *N/C contact with positive opening operation*	

Characteristics

Switch actuation		On end	By 30° cam	
Type of actuation				
Maximum actuation speed		0.5 m/s	0.1 m/s	1.5 m/s
Mechanical durability		10 million operating cycles		
Minimum force or torque	for tripping	7.5 N	5 N	0.05 N.m
	for positive opening	37.5 N	25 N	0.15 N.m
Cabling	3-pole contacts	Pre-cabled, PUR, 7 x 0.5 mm^2, length 1 m *(1)*.		
	4-pole contacts	Pre-cabled, PUR, 9 x 0.34 mm^2, length 1 m *(1)*.		

(1) For a 2 m long cable, replace L1 by L2.
For a 5 m long cable, replace L1 by L5.

Preventa safety solutions

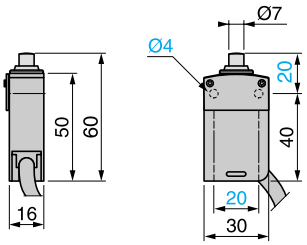
Limit switches

Miniature design, type XCS-M, metal

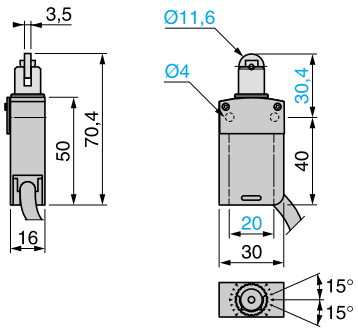
Pre-cabled

Dimensions

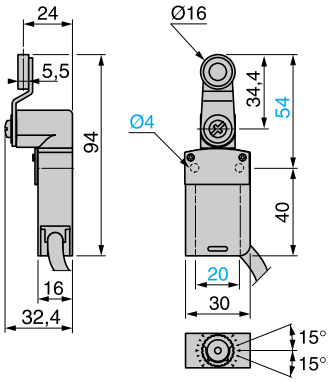
XCS-M●●10L1



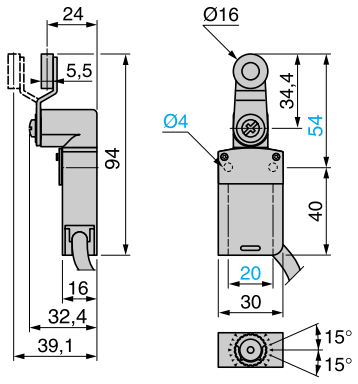
XCS-M●●02L1



XCS-M●●15L1



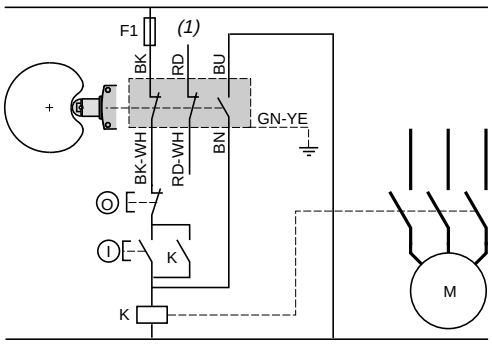
XCS-M●●16L1



Schemes

Wiring to category 1 conforming to EN 954-1

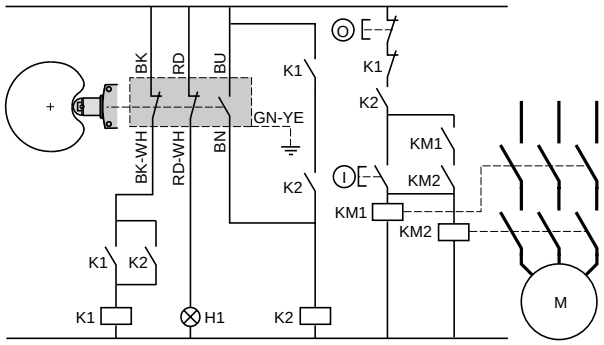
Example with 3-pole N/C + N/C + N/O contact and protection fuse to prevent shunting of the N/C contacts, either by cable damage or by tampering.



(1) Signalling contact.

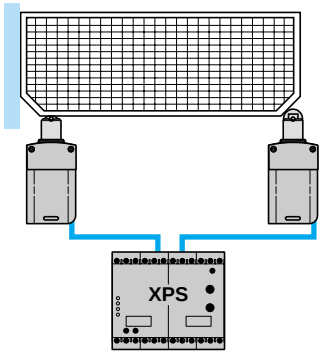
Wiring to category 3 conforming to EN 954-1

Example with 3-pole N/C + N/C+ N/O contact with mixed redundancy of the contacts and the associated control relays.



H1: “limit switch not actuated” indicator.

Example for guard monitoring using 2 switches and 1 safety module (category 4)



Operation in positive and negative (combined) mode