

### Description

The XCM is a pre-wired miniature limit switch designed to meet international standards and requirements. These miniature limit switches have either metal or plastic bodies and metal heads. All XCMD units have either snap action or slow break direct opening contacts. The plastic XCMN units have snap action contacts only. The 20 mm mounting hole spacing of these switches meet European requirements, and is also being specified on equipment made in North America.

**XCMD** – This switch has a metal body and is modular in design. It has been designed to reduce distributor stocking requirements, to make distributor modifications easier, and to reduce lead times. The heads, bodies and corded base assembly are all components that can be ordered separately. Heads can be easily interchanged with no screw removal or screw attachment required. The switch base assembly with cord can also be easily changed to obtain many different available lengths of cord while maintaining the IP67 enclosure rating. The cord can be adjusted in the base to be either side exit or bottom exit.

**XCMN** – The XCMN miniature switch has a rugged plastic housing with metal heads and is a non-modular product. The design of the XCMN is optimized for the OEM. There are no components available except levers for the rotary head.

### Metal Body Miniature XCMD as Compared to the Previous XCMA/B Design

XCMD Metal	XCMD	Previous XCMA/B
Features	Benefits	Features
Modular Metal head	easy to change component heads, no loose parts	non-modular
No screw head attachment	easy to change heads	non-modular
Head release fork blocked when switch is mounted	helps prevent tampering with head adjustment	N/A
Heads rotate and adjust in 15 degree increments (levers adjust in 15 degree increments)	precise positioning of head	N/A
Many heads available	more variety for difficult applications	Basic heads available
Lever travel increased to 90 degrees	reduces chance of damage to switch mechanism	70 degree travel
Direct opening contacts, both snap and slow break	an extra margin of protection is now available in snap action	slow break direct opening only
1 additional N/O and N/C contacts available	allows redundancy of circuits	one N/O-N/C contact
Enclosure rating IP 66, 67, 68	improved protection against leakage	IP 66, 67
Cord exit either vertical or horizontal	easy quick field conversion to horizontal or vertical	Side exit
Component plug-in base with cord	allows easy and quick change of cord length in the field	Integral cord
Modular components	reduce Distributor inventory (the same metal heads are used on metal and plastic compact and mini-body style limit switches)	non-modular
Same mounting as our existing and similar competitive mini limit switches	no re-drilling required for most applications	0.8" (20mm) wide hole spacing
Assembly in the US	late differentiation, quick delivery on non stock and specials	made in France

# OSICONCEPT™ Limit Switches

## XCMD Modular Miniature Specifications



### General Specifications

Conforming to Standards	Products	IEC 60 947-5-1, EN 60 947-5-1, UL 508, CSA C22-2 No. 14
	Machine assemblies	IEC 60 204-1, EN 60 204-1
Product Certifications		UL, CSA
Protective Treatment		Standard version: "TC"
Ambient Air Temperature		Operation: -13 to +158 °F (- 25 to + 70 °C). Storage: -40 to +158 °F (- 40 to + 70 °C)
Vibration Resistance		XCMD snap action: 5 gn. XCMD slow make-before-break: 25 gn (10...500 Hz) conforming to IEC 60 068-2-6
Shock Resistance		25 gn (18 ms) conforming to IEC 60 068-2-27
Electric Shock Protection		Class I conforming to IEC 60 140 and NF C 20-030
Degree of Protection		<b>IP66, IP67 and IP68 (1) conforming to IEC 60 529; IK06 conforming to EN50102, NEMAType 4X, 6, 12</b>
Materials		Body: Zinc Alloy, Heads : Zinc Alloy
Repeat Accuracy		0.05 mm on the tripping points

### Contact Characteristics

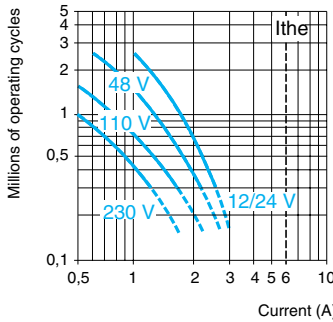
Rated Operational Characteristics ▲	<b>AC-15 ; B300 (Ue = 240 V, Ie = 1.5 A) (3 and 4 contacts: C300, R300) DC-13 ; R300 (Ue = 250 V, Ie = 0,1 A), according to IEC 60 947-5-1 Appendix A, EN 60 947-5-1</b>
Rated Insulation Voltage	Ui = 400 V, degree of pollution 3, according to IEC60 947-5-1 Ui = 300 V according to UL 508, CSA C22-2 No. 14
Rated Impulse Withstand Voltage	U imp = 4 kV conforming to IEC 60 947-1, IEC 60 664
Direct Operation (depending on model)	Direct opening contacts conforming to IEC 60 947-5-1 Appendix K, EN 60 947-5-1
Contact Resistance	≤ 25 mΩ according to IEC 60 255-7 Category 3
Short Circuit Protection	6 A cartridge fuse gG (gl)
Minimum Actuating Speed	N.O. + N.C snap action contact: 0.01 m/minute, N.O. + N.C. slow break-before-make contact: 6 m/minute

### Electrical Durability

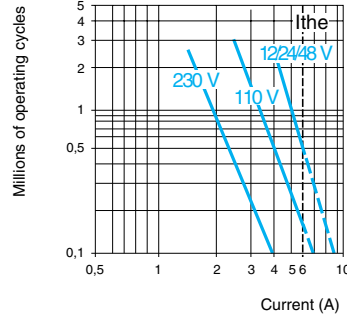
- Conforming to IEC 60 947-5-1 Appendix C
- Utilization categories AC-15 and DC-13
- Max. frequency: 3600 operating cycles/hour
- Load factor: 0.5

Alternate Current  
50/60 Hz  
∞ Inductive Circuit

**XCMD snap action (NO+NC, NO+NO, NO+NO+NC, NO+NO+NC+NC contact)**



**XCMD slow break (NO+NC, NO+NO+NC contact)**



Direct Current

Power switching for  
5 million operating cycles

Voltage	V	24	48	120
∞	W	3	2	1

Power switching for  
5 million operating cycles

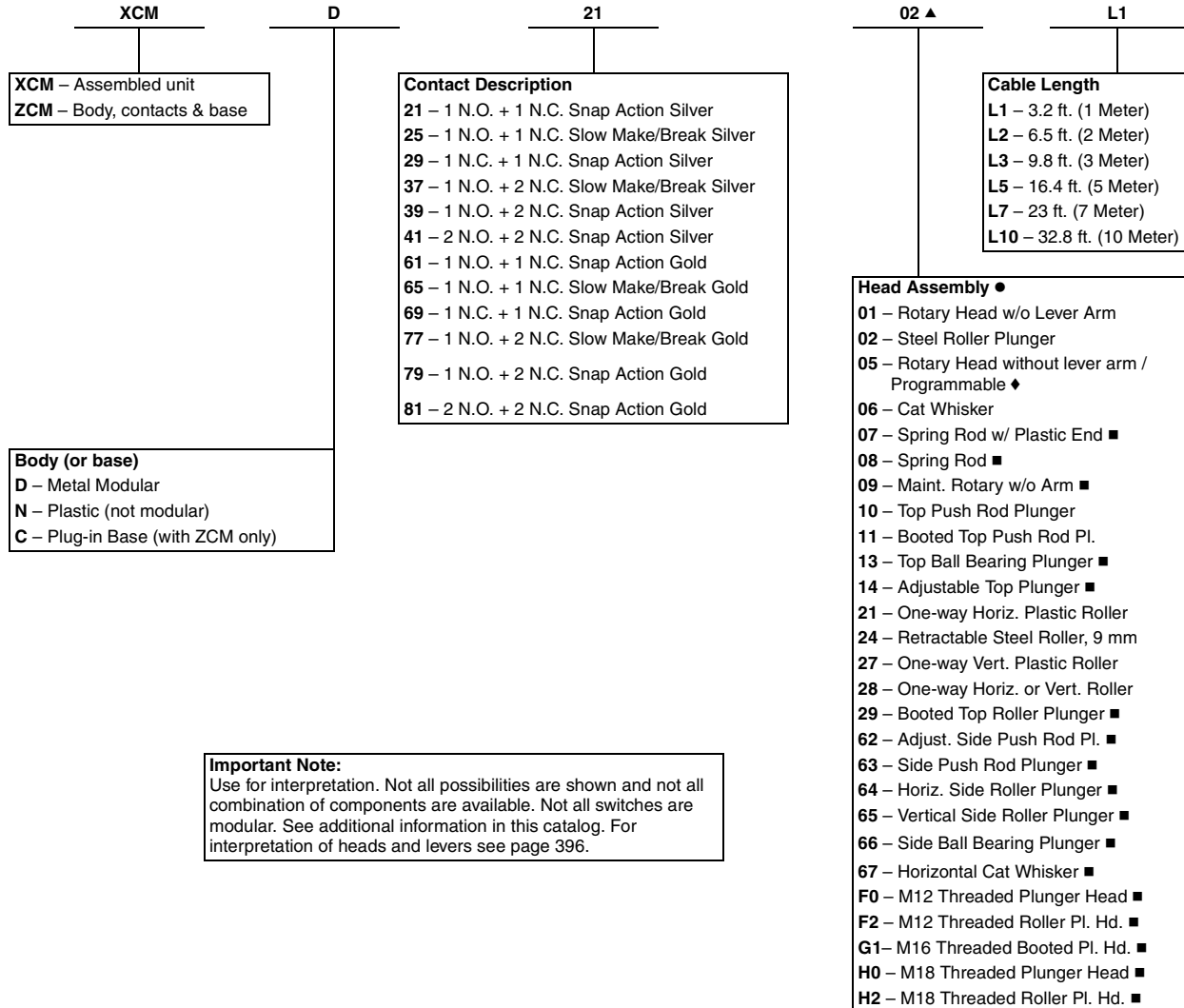
Voltage	V	24	48	120
∞	W	4	3	3

(1) Protection against prolonged immersion: the test conditions will be the subject of an agreement between the manufacturer and the user.

▲ 4 pin M12, 3A 250V / 5 pin M12, 4A 60V



#### Interpretation of the Catalog Number



- Call your local field sales office for availability.
- ▲ Last two digits of lever catalog number occupy this position when rotary heads with levers are required.
- See page 397 for levers.
- ◆ See page 399 for available levers, specifically allowed for the ZCE05 programmable head.

Limit Switches

**OSICONCEPT™ Limit Switches**  
**XCMD Modular Miniature**  
**Cross Reference to XCMA From Previous XCMA/B**



**Cross Reference From Previous XCMA/B To New XCMD**

Old XCMA/B	New XCMD	Old XCMA/B	New XCMD	Old XCMA/B	New XCMD	Old XCMA/B	New XCMD
XCMA102	XCMD2102L1	XCMA1037H7	XCMD2103L7	XCMA1155H7	XCMD2115L5	XCMB510	XCMD2510L1
XCMA1022	XCMD2102L2	XCMA103H7	XCMD2103L1	XCMA115H7	XCMD2115L1	XCMB5105	XCMD2510L5
XCMA1022H7	XCMD2102L2	XCMA110	XCMD2110L1	XCMA116	XCMD2116L1	XCMB510H7	XCMD2510L1
XCMA1023	XCMD2102L3	XCMA1102	XCMD2110L2	XCMA1163H7	XCMD2116L3	XCMB511H7	XCMD2511L1
XCMA1023H7	XCMD2102L3	XCMA1102	XCMD2110L2	XCMA116H7	XCMD2116L1	XCMB515H7	XCMD2515L1
XCMA1025	XCMD2102L5	XCMA1102	XCMD2110L2	XCMA117H7	XCMD2117L1	XCMB516	XCMD2516L1
XCMA1025H7	XCMD2102L5	XCMA1103	XCMD2110L3	XCMA125H7	XCMD2125L1	XCMF102	XCMD21F2L1
XCMA1025TQ	XCMD2102L5TQ	XCMA1103H7	XCMD2110L3	XCMB502	XCMD2502L1	XCMF102H7	XCMD21F2L1
XCMA1026H7	XCMD2102L7	XCMA1105	XCMD2110L5	XCMB502	XCMD2502L1	XCMF1032H7	XCMD21F2L2
XCMA1027H7	XCMD2102L7	XCMA110H7	XCMD2110L1	XCMB5022	XCMD2502L2	XCMF110	XCMD21F0L1
XCMA1028H7	XCMD2102L10	XCMA110T200	XCMD2110C12	XCMB5022H7	XCMD2502L2	XCMF1102H7	XCMD21F0L2
XCMA102H7	XCMD2102L1	XCMA111	XCMD2111L1	XCMB5023	XCMD2502L3	XCMF1105	XCMD21F0L5
XCMA103	XCMD2103L1 ▲	XCMA111H7	XCMD2111L1	XCMB5023H7	XCMD2502L3	XCMF110H7	XCMD21F0L1
XCMA1032	XCMD2103L2	XCMA115	XCMD2115L1	XCMB5024H7	XCMD2502L5	XCMB502	XCMD25F2L1
XCMA1032H7	XCMD2103L2	XCMA1152	XCMD2115L2	XCMB5025H7	XCMD2502L5	XCMG503H7	XCMD25F3L1
XCMA1033	XCMD2103L3	XCMA1152	XCMD2115L2	XCMB502H7	XCMD2502L1		
XCMA1033H7	XCMD2103L3	XCMA1152H7	XCMD2115L2	XCMB503	XCMD2503L1		

**XCMD Components – Catalog Number Selection**

XCMD Miniature Switch	XCMD Components				XCMD Miniature Switch	XCMD Components			
	Body with Contacts	Head	Lever	Corded Plug-in Base Only		Body with Contacts	Head	Lever	Corded Plug-in Base Only
XCMD2102L1	ZCMD21	ZCE02		ZCMC21L1	XCMD2116L3	ZCMD21	ZCE01	ZCY16	ZCMC21L3
XCMD2102L10	ZCMD21	ZCE02		ZCMC21L10	XCMD2117L1	ZCMD21	ZCE01	ZCY17	ZCMC21L1
XCMD2102L2	ZCMD21	ZCE02		ZCMC21L2	XCMD2125L1	ZCMD21	ZCE01	ZCY25	ZCMC21L1
XCMD2102L3	ZCMD21	ZCE02		ZCMC21L3	XCMD21F0L1	ZCMD21	ZCEF0		ZCMC21L1
XCMD2102L3TQ	ZCMD21	ZCE02		ZCMC21L3TQ	XCMD21F0L2	ZCMD21	ZCEF0		ZCMC21L2
XCMD2102L5	ZCMD21	ZCE02		ZCMC21L5	XCMD21F0L5	ZCMD21	ZCEF0		ZCMC21L5
XCMD2102L5TQ	ZCMD21	ZCE02		ZCMC21L5TQ	XCMD21F2L1	ZCMD21	ZCEF2		ZCMC21L1
XCMD2102L6	ZCMD21	ZCE02		ZCMC21L5	XCMD21F2L2	ZCMD21	ZCEF2		ZCMC21L2
XCMD2102L7	ZCMD21	ZCE02		ZCMC21L7	XCMD2502L1	ZCMD25	ZCE02		ZCMC25L1
XCMD2102L7	ZCMD21	ZCE02		ZCMC21L7	XCMD2502L1	ZCMD25	ZCE02		ZCMC25L1
XCMD2103L1 ▲	ZCMD21	ZCE02		ZCMC21L1	XCMD2502L2	ZCMD25	ZCE02		ZCMC25L2
XCMD2103L2	ZCMD21	ZCE02		ZCMC21L2	XCMD2502L3	ZCMD25	ZCE02		ZCMC25L3
XCMD2103L3	ZCMD21	ZCE02		ZCMC21L3	XCMD2502L5	ZCMD25	ZCE02		ZCMC25L5
XCMD2103L7	ZCMD21	ZCE02		ZCMC21L7	XCMD2503L1	ZCMD25	ZCE02		ZCMC25L1
XCMD2110C12	ZCMD21	ZCE10		ZCMC21C12	XCMD2510L1	ZCMD25	ZCE10		ZCMC25L1
XCMD2110L1	ZCMD21	ZCE10		ZCMC21L1	XCMD2510L5	ZCMD25	ZCE10		ZCMC25L5
XCMD2110L2	ZCMD21	ZCE10		ZCMC21L2	XCMD2511L1	ZCMD25	ZCE11		ZCMC25L1
XCMD2110L3	ZCMD21	ZCE10		ZCMC21L3	XCMD2515L1	ZCMD25	ZCE01	ZCY15	ZCMC25L1
XCMD2110L5	ZCMD21	ZCE10		ZCMC21L5	XCMD2516L1	ZCMD25	ZCE05	ZCY16	ZCMC25L1
XCMD2111L1	ZCMD21	ZCE11		ZCMC21L1	XCMD25F2L1	ZCMD25	ZCEF2		ZCMC25L1
XCMD2115L1	ZCMD21	ZCE01	ZCY15	ZCMC21L1	XCMD25F2L1	ZCMD25	ZCEF2		ZCMC25L1
XCMD2115L2	ZCMD21	ZCE01	ZCY15	ZCMC21L2					
XCMD2115L5	ZCMD21	ZCE01	ZCY15	ZCMC21L5					

▲ XCMD2103L● is not a catalog item. Use the standard XCMD2102L● and rotate the head to the cross roller position.

Limit Switches