

Farnell Codes

423 2884-2902

425 3711-3723

425 3772-3784

425 3814-4557

425 4569-4594

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9007C

XCKJ

XCKML

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9007 Snap Switch

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Heavy Duty Industrial Limit Switches

- Class 9007 Type C oiltight, watertight switches, compact and reed types available 19-4
- Class 9007 Type AW precision oiltight, plunger style is micrometer adjustable Catalog 9006CT0101
- XCKJ precision switches with direct acting contacts to meet most international standards 19-11
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Severe Duty Limit Switches

- Class 9007 Type T/FT oiltight and foundry switches with 20 amp contacts Catalog 9006CT0101
- Type L oiltight mill and foundry switches with up to 3 circuits Catalog 9006CT0101

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- XCKL general duty switches to meet most international standards 19-20
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- Class 9007 Type MS/ML switches are encapsulated with a NEMA 6P rating, and 10 amp contacts 19-25
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- XCM metric mounting and available direct opening contacts meet most international standards 19-24

Industrial Snap Switches

- Class 9007 basic snap switches without enclosures, with or without operators 19-30

Current Ratings





All Limit Switch Types

Contact Configurations—Direct opening contacts meet IEC 60947-5-1 requirements.

Maximum Current Ratings for Control Circuit Contacts—All Types














Switch Type	Contacts	Direct Opening Contacts Meet IEC 60947-5-1 Requirements	AC – 50 or 60 Hz						DC			AC / DC	
			Volts	Inductive 35% Power Factor				Resistive 75% Power Factor	Volts	Inductive and Resistive			Continuous Carrying A
				Make		Break		Make and Break Amperes		Make and Break Amperes			
				A	VA	A	VA			Single Pole	Double Pole		
9007C	Reed SPST Form A or B	No	120	15	1800	1.5	180	1.5	125	0.55	...	5	
			240	7.5	1800	0.75	180	0.75	250	0.27	...	5	
			480	3.75	1800	0.375	180	0.375	...	...	...	5
			600	3	1800	0.3	180	0.300	...	...	...	5
L100/L300	SPDT with 2 or 3 Contacts Form Z	No	120	150	18000	20	2400	6	125	1.1	...	20/5	
			240	75	18000	12.5	3000	3	250	0.55	...	20/5	
			480	37.5	18000	6.25	3000	1.5	600	0.2	...	20/5	
			600	30	18000	5	3000	1.2	...	...	...	20/5
9007MS	SPST Form C	No	120	60.0	7200	6.0	720	...	...	...	10 (AC)	
			240	30.0	7200	3.0	720	...	...	...	5 Res @ 28 Vdc	
9007ML	SPDT Form Z	No	120	60.0	7200	6.0	720	...	...	...	10 (AC)	
			240	30.0	7200	3.0	720	...	...	...	5 Res @ 28 Vdc	
XCMU	SPDT Form Zb	Yes	120	60	7200	6	720	6	125	0.55	...	10/2.5	
			240	30	7200	3	720	3	250	0.27	...	10/2.5	
9007T and FT	SPDT Quick Make and Break Form Z	No	120	150	18000	20	2400	20	125	5.0	...	20	
			240	75	18000	12.5	3000	12.5	250	1.0	...	20	
			480	37.5	18000	6.25	3000	6.25	600	0.2	...	20	
			600	30	18000	5	3000	5.0	...	...	...	20
9007XA	Reed SPST Form A or B	No	120	2.0	240	0.2	24	0.2	125	0.2	...	0.5	
			240	1.0	240	0.1	24	0.1	...	...	...	0.5
			120	60	7200	6	720	6	125	0.55	...	10	
			240	30	7200	3	720	3	250	0.27	...	10	
XCK-J Plug-in	SPDT Form Z	No	120	60	7200	6	720	6	125	0.55	...	10	
			240	30	7200	3	720	3	250	0.27	...	10	
XCK-J Non Plug-in	2 SPDT Form ZZ	No	480	15	7200	1.5	720	1.5	600	0.1	...	10	
			600	12	7200	1.2	720	1.2	...	...	...	10
XCK-L	SPDT Form Zb	Yes	120	60	7200	6	720	6	125	0.55	...	10	
			240	30	7200	3	720	3	250	0.27	...	10	
XCKML	2 SPDT Form Zb	Yes	120	60	7200	6	720	6	125	0.55	...	10/2.5	
			240	30	7200	3	720	3	250	0.27	...	10/2.5	
XCKD 2 Contacts	SPDT Form Zb	Yes	120	60	7200	6	720	6	125	0.55	...	10/2.5	
			240	30	7200	3	720	3	250	0.27	...	10/2.5	
3 Contacts	3 Pole Form Zb	Yes	120	30	3600	3	360	3	125	0.22	...	5/1.0	
			240	15	3600	1.5	360	1.5	250	0.11	...	5/1.0	
XCKP 2 Contacts	SPDT Form Zb	Yes	120	60	7200	6	720	6	125	0.55	...	10/2.5	
			240	30	7200	3	720	3	250	0.27	...	10/2.5	
3 Contacts	3 Pole Form Zb	Yes	120	30	3600	3	360	3	125	0.22	...	5/1.0	
			240	15	3600	1.5	360	1.5	250	0.11	...	5/1.0	
XCKT 2 Contacts	SPDT Form Zb	Yes	120	60	7200	6	720	6	125	0.55	...	10/2.5	
			240	30	7200	3	720	3	250	0.27	...	10/2.5	
3 Contacts	3 Pole Form Zb	Yes	120	30	3600	3	360	3	125	0.22	...	5/1.0	
			240	15	3600	1.5	360	1.5	250	0.11	...	5/1.0	
XCMD 2-4 Contacts	2,3 or 4 Pole Form Zb	Yes	120	30	3600	3	360	3	125	0.22	...	5/1.0	
			240	15	3600	1.5	360	1.5	250	0.11	...	5/1.0	
XCMN 2 Contacts	SPDT Form Zb	Yes	120	30	3600	3	360	3	125	0.22	...	5/1.0	
			240	15	3600	1.5	360	1.5	250	0.11	...	5/1.0	

For contacts used in safety applications (end of travel, emergency stop device, etc.) the assurance of direct opening is required (see IEC 204, EN 60204 or NF C 79-130) after each test. The opening of the contact must be verified by testing with an impulse voltage (2500 V).

Electrical Symbols For Contacts	 Form Za, the 2 contacts are the same polarity.	 Form Zb, the 2 contacts are electrically separate.
Symbols for Direct Opening	 Simplified Version	 Complete symbol

▲ Use of a transient suppressor will extend life of the switch when used on heavy electrical loads.
 ■ SPST versions are rated 0.5 hp at 110 and 200 Vac.
 Alternate Current Ratings—Several product lines offer special versions or options with alternate contact configurations or contact materials, which may result in current ratings that differ from those listed above. Refer to the respective product sections for further information.

Wiring Diagrams

												
Form A	Form B	Form C	Form AA	Form BB	Form CC	Form X	Form Y	Form Zb	Form Z	Form XX	Form YY	Form ZZ
SPST-NO	SPST-NC	SPDT	DPST-NO	DPST-NC	DPDT	SPST-NO-DB	SPST-NC-DB	SPDT-DB Isolated Contacts	SPDT-DB	DPST-NO-DB	DPST-NC-DB	DPDT-DB

For additional information, reference Catalog #9006CT0101.

Enclosure Construction

Enclosure Ratings

Type	NEMA													IEC Type		
	1	2	3	4	4X	6	6P	7	9	12	13	IP65	IP66	IP67		
9007AF	▲	▲		▲						▲	▲					
9007AW	▲	▲		▲						▲	▲					
9007C	▲	▲		▲		▲	▲			▲	▲					
9007CF	▲	▲		▲		▲	▲			▲	▲					
9007CR	▲	▲		▲		▲	▲	▲	▲	▲	▲					
9007FT	▲	▲		▲						▲	▲					
L	▲			▲							▲					
9007MS/ML ◆	▲	▲		▲		▲	▲			▲	▲			▲		
T	▲	▲		▲						▲	▲					
XA	▲	▲		▲		▲	▲			▲	▲					
XCK-J	▲	▲	▲	▲						▲			▲			
XCK-L	▲	▲	▲	▲						▲			▲			
XCK-P & T ■	▲			▲						▲			▲			
XCM														▲		

▲ Indicates NEMA or IEC Type Rating available for each product.
◆ For indoor use only—not UV protected.
■ Enclosure ratings are NEMA 1, 2, 3, 4, 6, 6P, 12, and 13 except for option 21 (low force) which is NEMA 1 only. The 9007 MOSS (omni-directional operation) enclosure ratings are 1, 2, 12, and 13.

Ambient Temperature Ranges

The low temperatures listed below are based on the absence of freezing moisture or water. Care should be taken to avoid sub-freezing temperatures where dripping or splashing water is present and to avoid bringing a cold switch into a warm humid atmosphere and then back into sub-freezing temperatures. The water or moisture can freeze around the switch lever arm or plunger and cause jamming

	Low Temperature	High Temperature At Full Rated Load
9007 AF, AW		
Lever Type	-65° F (-54° C)	185° F (85° C)
Plunger Type	0° F (-17.8° C)	185° F (85° C)
9007 C		
Lever Type	-20° F (-28.9° C)	185° F (85° C)
Plunger & Wobble Stick Type	0° F (-17.8° C)	185° F (85° C)
9007 FT★, T	-10° F (-23° C)	185° F (85° C)
HL	0° F (-17.8° C)	350° F (177° C)
L	0° F (-17.8° C)	200° F (93° C)
9007 MS/ML	-40° F (-40° C)	221° F (105° C)
9007 XA	-20° F (-28.9° C)	140° F (60° C)
XCK-J, L, P, T	-13° F (-25° C)	158° F (70° C)
XCM	-13° F (-25° C)	158° F (70° C)

★ The Type FT will withstand hot falling sand up to 300° F (149° C); however, ambient temperature for the FT switch is the same as the Type T above (185° F, 85° C). Do not use in higher temperature ambients.

Alternate Temperature Limits

Some switches are available with higher or lower temperature limits, by selecting special versions or special options. Refer to the respective product sections for further information.

Sealing

9007AF, AW

Plunger seals.....PTFE (Teflon)
All other sealsnitrile (Buna N)

9007C, CF, CR

Standard shaft seals on lever typesfluorocarbon (VITON)
Plunger and wobble stick boots..... neoprene
All other sealsnitrile (Buna N)
Fluorocarbon seals are available in place of nitrile and neoprene on 9007 Type C.

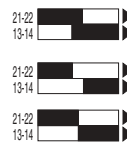
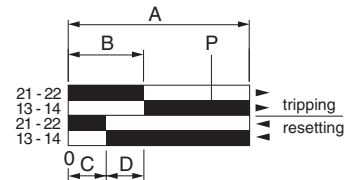
Denison L..... PVC

9007T and FT

Shaft seal..... nitrile (Buna N)
Cover gasket..... nitrile (Buna N)
Base plate gasketcellulose fiber laminate

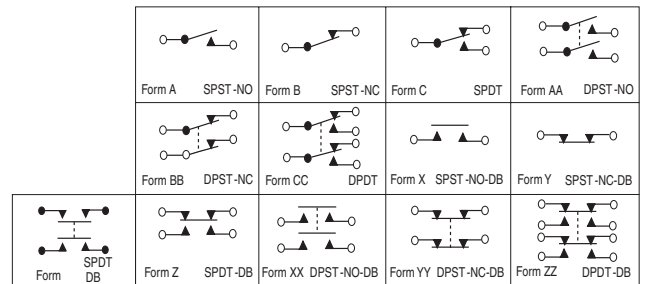
XCK-J, P, Tnitrile

Contact Function Diagrams



Make-before-break (overlapping) SPDT: the normally open contact closes before the normally closed contact opens.
Break-before-make (offset) SPDT: the normally closed contact opens before the normally open contact closes.
Simultaneous make and break—SPDT: the normally closed contact opens at the same time as the normally open contact closes.

Wiring Diagrams



For additional information, reference Catalog #9006CT0101.

Heavy Duty, Industrial Single Pole and Two Pole

Class 9007—Type C

SQUARE D
www.SquareD.com
For the most up-to-date information

All Type C Switches Are Rated NEMA 6P and UL Type 6P

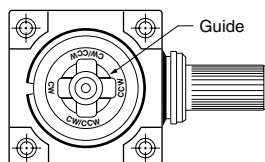
Select Turret Head	Lever Arm Type						Side Plunger Type				
	Standard Pre-travel Spring Return	Low Differential Spring Return	Neutral Position		Extra Light Operating Torque Spring Return	Maintained Contact	Side Roller Plunger Spring Return Vertical Roller Type	Side Push Rod Plunger Spring Return	Side Push Rod Plunger Adjustable Spring Return	Side Push Rod Plunger Maintained Contact	
			Standard Pre-travel Spring Return	Low Differential Spring Return							
	CW & CCW ▲	CW & CCW ▲	CW & CCW	CW & CCW	CW & CCW ▲	CW (Trip) CCW (Reset)					
Select Basic Switch	Contacts	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Standard Box Plug-in	1 N.O. 1 N.C.	C54B2 \$140.00	C54A2 \$150.00	...	...	C54N2 \$170.00	C54C \$170.00	C54F \$182.00	C54G \$165.00	C54GD \$173.00	C54H \$194.00
	2 N.O. 2 N.C.	C62B2 170.00	C62A2 177.00	...	...	C62N2 198.00	C62C 198.00	C62F 212.00	C62G 194.00	C62GD 201.00	C62H 222.00
	2 N.O.—2 N.C. Neutral Position	...	...	C68T10 \$177.00	C68T5 \$191.00	...	...	...	...	...	...
	2 N.O.—2 N.C. Two Stage	C66B2 198.00	C66A2 222.00	...	...	C66N2 227.00	...	C66F 233.00	C66G 210.00	C66GD 233.00	...
Compact Box Plug-in	1 N.O. 1 N.C.	C52B2 140.00	C52A2 150.00	...	...	C52N2 170.00	C52C 170.00	C52F 182.00	C52G 165.00	C52GD 174.00	C52H 194.00
UL Listed for Hazardous Location Division I Class I Groups B,C,D Class II Groups E, F and G	1 N.O. 1 N.C.	CR53B2 255.00	CR53A2 264.00	...	...	CR53N2 285.00	CR53C 285.00	CR53F 299.00	CR53G 281.00	CR53GD 290.00	CR53H 308.00
	2 N.O. 2 N.C.	CR61B2 285.00	CR61A2 294.00	...	...	CR61N2 315.00	CR61C 315.00	CR61F 320.00	CR61G 308.00	CR61GD 320.00	CR61H 338.00
	2 N.O.—2 N.C. Neutral Position	...	...	CR67T10 315.00	CR67T5 323.00	...	...	...	...	...	...
	2 N.O.—2 N.C. Two Stage	CR65B2 315.00	CR65A2 323.00	...	...	CR65N2 342.00	...	CR65F 347.00	CR65G 338.00	CR65GD 347.00	...
Flush Mounting	1 N.O. 1 N.C.	CF53B2 167.00	CF53A2 165.00	...	...	CF53N2 186.00	CF53C 186.00	CF53F 221.00	CF53G 180.00	...	CF53H 213.00
	2 N.O. 2 N.C.	CF61B2 186.00	CF61A2 198.00	...	...	CF61N2 222.00	CF61C 222.00	CF61F 237.00	CF61G 213.00	...	CF61H 249.00
	2 N.O.—2 N.C. Neutral Position	...	...	CF67T10 197.00	CF67T5 206.00	...	...	...	...	...	...
	2 N.O.—2 N.C. Two Stage	CF65B2 222.00	CF65A2 233.00	...	...	CF65N2 255.00	...	CF65F 270.00	CF65G 249.00	...	...
Head Only	Type Number	B 43.50	A 53.00	T10 43.50	T5 53.00	N 72.30	C 72.30	F 87.00	G 67.50	GD 76.50	H 96.00
	Pre-travel	10°	5°	10°	5°	10°	45°	0.08"		0.14"	
Nominal Operating Data	Pre-travel Two Stage	First Stage	10°	5°	...	...	10°	...	0.08"		...
		First to Second Stage	2½°	1½°	...	...	2½°	...	0.02"		...
	Total Travel	90°	90°	90°	90°	90°	90°	0.25"		0.25"	
	Differential	4°	2°	4°	2°	4°	...	0.03"		...	
	Reverse Overtravel	90°	90°	90°	90°	90°	...	...		...
	Operating Torque/Force—1 Pole & 2 Pole	4 in-lb	4 in-lb	4 in-lb	4 in-lb	25 in-oz	3 in-lb	4 lbs.		7 lbs.	
	Repeat Accuracy—Linear travel of cam (1½" lever arm)	± 0.002"	± 0.001"	± 0.002"	± 0.002"	± 0.002"	± 0.002"	0.001"		...	
Plug-in Replacement Units	To order basic switch and head less the plug-in receptacle base, substitute the letters "CO" for the first "C" in the type number. Example: Open type replacement for Type C54B2 is Type CO54B2 .										

▲ These devices are factory set to operate the contacts in both the CW and CCW directions. **Mode of operation** is field convertible to CW only or CCW only. **To order factory converted devices**—for CCW only operation, change the "2" at the end of the type number to "1" (Example: C54B2 becomes C54B1); for CW only operation, delete the "2" at the end of the type number (Example: C54B2 becomes C54B).

Mode Change—Lever Arm Type

Mode of operation is easily convertible to clockwise, counterclockwise, or both. Simply point the arrow to the letters representing the desired direction—CW, CCW, or CW/CCW. All parts are captive.

Selection Mode Arrow

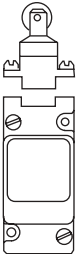













- Can be converted to horizontal roller type in the field. To order horizontal roller version add the letter "H" at the end of the equivalent vertical roller version type number (Example: C54F would become C54FH).
- ◆ To lock the nut in the desired position, crimp the slot near the bottom of the nut.

Acceptable Wire Sizes: 12–22 AWG
Recommended Terminal Clamp Torque 7 in-lb
Lever arms p. 19-9, 19-10
Electrical ratings p. 19-2
Special features p. 19-7, 19-8

For additional information, reference Catalog #9006CT0101.

All Type C Switches Are Rated NEMA 6P And UL Type 6P

Select Turret Head	Top Plunger Type					Wobble Stick Type					Plug-in Unit Less Head	Plug-in Receptacle Only	
	Top Roller Plunger Spring Return	Top Push Rod Plunger Spring Return	Top Push Rod Plunger Adjustable Spring Return	Palm Operated	Universal	Wobble Stick DELRIN Extension	Wobble Stick Wire Extension	Wobble Stick Coil Spring Extension	Cat Whisker				
													
Select Basic Switch	Contacts	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	
Standard Box Plug-in	1 N.O. 1 N.C.	C54D \$165.00	C54E \$155.00	C54ED \$165.00	C54R▲ \$155.00	C54JKC \$135.00	C54J \$155.00	C54K \$155.00	C54KC \$155.00	C54L \$116.00	CO54 \$ 89.00	CT54 \$19.20	
	2 N.O. 2 N.C.	C62D 194.00	C62E 182.00	C62ED 194.00	C62R▲ 182.00	C62JKC 170.00	C62J 182.00	C62K 182.00	C62KC 182.00	C62L 144.00	CO62 107.00	CT62 19.20	
	2 N.O.—2 N.C. Neutral Position	...	...	...	...	...	...	...	...	...	CO68 116.00	CT62 19.20
	2 N.O.—2 N.C. Two Stage	C66D 222.00	C66E 212.00	C66ED 222.00	C66R▲ 212.00	C66JKC 198.00	C66J 212.00	C66K 212.00	C66KC 198.00	C66L 182.00	CO66 135.00	CT62 19.20	
Compact Box Plug-in	1 N.O. 1 N.C.	C52D 165.00	C52E 155.00	C52ED 165.00	C52R▲ 155.00	C52JKC 140.00	C52J 155.00	C52K 155.00	C52KC 155.00	C52L 116.00	CO52 78.00	CT52 19.20	
	1 N.O. 1 N.C.	CR53D 281.00	CR53E 269.00	CR53ED 281.00	CR53R▲ 269.00	CR53JKC 255.00	CR53J 269.00	CR53K 269.00	CR53KC 269.00	CR53L 233.00	...	...
	2 N.O. 2 N.C.	CR61D 308.00	CR61E 299.00	CR61ED 308.00	CR61R▲ 299.00	CR61JKC 285.00	CR61J 299.00	CR61K 299.00	CR61KC 299.00	CR61L 260.00	...	...
	2 N.O.—2 N.C. Two Stage	CR65D 338.00	CR65E 327.00	CR65ED 338.00	CR65R▲ 327.00	CR65JKC 315.00	CR65J 327.00	CR65K 327.00	CR65KC 327.00	CR65L 290.00	...	...
UL Listed for Hazardous Location Division I Class I Groups B,C,D Class II Groups E, F and G	1 N.O. 1 N.C.	CR53D 281.00	CR53E 269.00	CR53ED 281.00	CR53R▲ 269.00	CR53JKC 255.00	CR53J 269.00	CR53K 269.00	CR53KC 269.00	CR53L 233.00	...	...
	2 N.O. 2 N.C.	CR61D 308.00	CR61E 299.00	CR61ED 308.00	CR61R▲ 299.00	CR61JKC 285.00	CR61J 299.00	CR61K 299.00	CR61KC 299.00	CR61L 260.00	...	...
Head Only	1 N.O. 1 N.C.	CR65D 338.00	CR65E 327.00	CR65ED 338.00	CR65R▲ 327.00	CR65JKC 315.00	CR65J 327.00	CR65K 327.00	CR65KC 327.00	CR65L 290.00	...	...
	2 N.O.—2 N.C. Two Stage	CR65D 338.00	CR65E 327.00	CR65ED 338.00	CR65R▲ 327.00	CR65JKC 315.00	CR65J 327.00	CR65K 327.00	CR65KC 327.00	CR65L 290.00	...	...
Nominal Operating Data	Type Number	D 67.40	E 57.90	ED 67.40	R ▲ 57.90	JKC 43.50	J 57.90	K 57.90	KC 57.90	L 19.10	...	...
	Pre-travel	0.08"				10° (Any Direction)				20°	...	...
	Pre-travel Two Stage	First Stage	0.08"				10° (Any Direction)				20°
		First to Second Stage	0.01"				4°				5°
	Total Travel	0.25"				90°				90°	...	...
	Differential	0.02"				3°				6°	...	...
	Reverse Overtravel	...				...				...	...	...
	Operating Torque/Force—1 Pole and 2 Pole	3 lbs.				3 in-lb				7 in-oz	...	...
Repeat Accuracy—Linear travel of cam	± 0.001"				...				...	...	...
Plug-in Replacement Units	To order basic switch and head less the plug-in receptacle base, substitute the letters "CO" for the first "C" in the type number. Example: Open type replacement for Type C54D is Type CO54D.												

- ▲ Price does not include mushroom button. Must be ordered separately. See page 19-8.
- To lock the nut in the desired position, crimp the slot near the bottom of the nut.
- ◆ DELRIN is a registered trademark of DuPont.
- ★ Wobble stick extensions are available separately for the universal head or as replacements for complete devices as follows:

Description	Type	Price
DELRIN extension	WJ	\$17.70
Wire extension	WK	17.70
Coil Spring extension	WKC	17.70

Types C and CF  File CCN E42259 NKCR  File Class LR25490 3211-03 

Type CR  File CCN E10054 NOIV  File Class LR26817 3218-02



Compact Box Hazardous Location Standard Box Flush Mounting

Acceptable Wire Sizes: 12–22 AWG
Recommended Terminal Clamp Torque 7 in-lb

For additional information, reference Catalog #9006CT0101.

Heavy Duty, Industrial Reed Contact

Class 9007—Type C

SQUARE D
www.SquareD.com
For the most up-to-date information

Heavy Duty Precision Turret Head Type

Can be used with standard industrial relays and starters to NEMA size 4.
UL Listed for Class I, II and III Division 2 Groups B, C, D, F and G hazardous locations. They can also be used as inputs to intrinsically safe systems.

Note: Because reed switches are operated by a magnet, they should not be installed in areas where strong magnetic fields may be present. The devices should always be checked for proper operation after installation

All Type C Switches Are Rated NEMA 6P And UL Type 6P

Select Basic Switch	Contacts	Type	Lever Arm Type				Side Plunger Type				Plug-in Unit Less Head	Plug-in Receptacle Only
			Standard Pre-travel Spring Return	Low Differential Spring Return	Extra Light Operating Torque Spring Return	Maintained Contact	Side Roller Plunger Spring Return Vertical Roller Type	Side Push Rod Plunger Spring Return	Side Push Rod Plunger Adjustable Spring Return	Side Push Rod Plunger Maintained Contact		
			CW & CCW▲	CW & CCW▲	CW & CCW▲	CW (Trip) CCW (Reset)						
Standard Box Plug-in	Reed	1 N.O.	C84B2 \$198.00	C84A2 \$209.00	C84N2 \$230.00	C84C \$230.00	C84F \$248.00	C84G \$227.00	C84GD \$234.00	C84H \$258.00	▼	CT54 \$19.20
		1 N.C.	C86B2 198.00	C86A2 209.00	C86N2 230.00	C86C 230.00	C86F 248.00	C86G 227.00	C86GD 234.00	C86H 258.00	▼	CT54 19.20
Head Only	Type Number		B 43.50	A 53.00	N 72.00	C 72.00	F 87.00	G 68.00	GD 77.00	H 97.00	...	...
Nominal Operating Data	Pre-travel		13°	7°	13°	45°	0.110"			0.14"	...	...
	Total Travel		90°	90°	90°	90°	0.25"			0.25"	...	...
	Differential		7°	4°	7°	...	0.07"			...	...	...
	Reverse Overtravel		90°	90°	90°	...	...			...	...	...
	Operating Torque/Force		4 in-lb	4 in-lb	25 in-oz	3 in-lb	4 lbs.			7 lbs.	...	...
	Repeat Accuracy—Linear travel of cam (1½" lever arm)		± 0.006"	± 0.003"	± 0.006"	± 0.006"	± 0.003"			...	...	...

19 LIMIT SWITCHES

Select Basic Switch	Contacts	Type	Top Plunger Type				Wobble Stick Type					Plug-in Unit Less Head	Plug-in Receptacle Only	
			Top Roller Plunger Spring Return	Top Push Rod Plunger Spring Return	Top Push Rod Plunger Adjustable Spring Return	Palm Operated	Universal	Wobble Stick DELRIN Extension	Wobble Stick Wire Extension	Wobble Stick Coil Spring Extension	Cat Whisker			
Standard Box Plug-in	Reed	1 N.O.	C84D \$227.00	C84E \$213.00	C84ED \$227.00	C84R♦ \$213.00	C84JKC \$198.00	C84J \$213.00	C84K \$213.00	C84KC \$213.00	C84L \$171.00	▼	CT54 \$19.20	
		1 N.C.	C86D 227.00	C86E 213.00	C86ED 227.00	C86R♦ 213.00	C86JKC 198.00	C86J 213.00	C86K 213.00	C86KC 213.00	C86L 171.00	▼	CT54 19.20	
Head Only	Type Number		D 67.00	E 58.00	ED 67.00	R♦ 58.00	JKC 43.50	J 58.00	K 58.00	KC 58.00	L 19.10	...	...
Nominal Operating Data	Pre-travel		0.100"				13° (Any Direction)					25°	...	...
	Total Travel		0.25"				90°					90°	...	...
	Differential		0.05"				11°					18°	...	...
	Operating Torque/Force		4 lbs.				3 in-lb					7 in-oz	...	...
		Repeat Accuracy—Linear travel of cam		± 0.003"			

Plug-in Replacement Units To order basic switch and head less the plug-in receptacle base, substitute the letters "CO" for the first "C" in the type number. Example: Open type replacement for Type C84B2 is Type CO84B2.










- ▲ These devices are factory set to operate the contacts in both the CW and CCW directions. Mode of operation is field convertible to CW only or CCW only. To order factory converted devices—for CCW only operation, change the "2" at the end of the type number to "1" (Example: C84B2 becomes C84B1); for CW only operation, delete the "2" at the end of the type number (Example: C84B2 becomes C84B).
- Can be converted to horizontal roller type in the field. To order horizontal roller version add the letter "H" at the end of the equivalent vertical roller version type number (Example: C84F would become C84FH).
- ♦ Price does not include mushroom button. Must be ordered separately from page 19-8.
- ▼ To lock the nut in the desired position, crimp the slot near the bottom of the nut.
- ★ Plug-in units less head are not available as separate units. Order complete plug-in replacement units instead. Plug-in replacement units include the plug-in unit and head.
- △ Wobble stick extensions are available separately for the universal head or as replacements for complete devices. See bottom of page 19-6.

Acceptable Wire Sizes: 12–22 AWG
Recommended Terminal Clamp Torque :..... 7 in-lb



For additional information, reference Catalog #9006CT0101.

Special Features (Do not apply to Types CF or CR unless noted)—Not Field Installable, Except Where Noted

Special Features	Form	Price Addition
<p>Optional Shaft Equipped With Type T-FT Hub: Any lever arm Type C, CF or CR switch can be furnished with an optional shaft and hub combination which will accept the lever arms normally used with Type T and FT limit (position) switches. To order, add S9 as suffix to the device type number. For example, to order a 9007 C54B2 with this modification, order as a 9007 C54B2-S9. For details about the switches and lever arms that can be furnished with this modification, see the appropriate product catalog.</p> <p>HUB ONLY: Can be field installed on any Type C lever type switch. Class 9007 Type S9, \$6.00 each.</p>		<p>Add S9 as a Suffix to the Device Type Number</p> <p>\$ 9.50</p>
<p>LED Pilot Light, 24-120 Volts AC or DC on Plug-In Type Switch (Type C52, C54, C62, C64, C66, C68 or ▲):</p> <p>Form P5 Thru P9 Light Normally On</p> <p>Form P10 Customer Installed Jumper</p> <p>Light Normally Off</p> <p>*Only one of the jumpers may be used Pilot Light is ON when load is energized</p> <p>▲ Type C84 and C86 are available with P5 or P6 pilot lights only.</p>	<p>Addition of LED pilot light in parallel with N.O. contact (light normally on)</p> <p>Addition of LED pilot light in parallel with N.C. contact (light normally off)</p> <p>Addition of two LED pilot lights, one in parallel with N.O. contact (light normally on), one in parallel with N.C. contact (light normally off).</p> <p>Addition of two LED pilot lights in parallel with N.O. contacts (lights normally on) (Types C62, C64, C66 or C68 only)</p> <p>Addition of two LED pilot lights in parallel with N.C. contacts (lights normally off) (Types C62, C64, C66, or C68 only)</p> <p>Addition of one isolated LED pilot light (light on when load is energized) (Type C54 only. Not available with Y1901.)</p>	<p>P5 28.50</p> <p>P6 28.50</p> <p>P7 74.00</p> <p>P8 74.00</p> <p>P9 74.00</p> <p>P10 38.00</p>
<p>Pre-Wired Receptacle: Single pole plug-in limit (position) switch furnished with pre-wired mini 5 pin Brad Harrison male receptacle (or interchangeable Crouse-Hinds receptacle at our convenience) No. 41310. For use with Brad Harrison female portable plug No. 41306, 41307, or 41308 (or equal). (Not available with P10 or for hazardous locations.)</p> <p>Single Pole—Y1905: Same as Y1901 but with different wire color coding</p> <p>Tamperproof Screws—Complete Switch Only Single Pole—Same as Y1901 but with tamperproof screws on head and body</p> <p>Other versions with different wiring diagrams per automotive requirements are available. Contact your local Square D field office.</p>	<p>Wiring Diagrams Form Y190_____</p> <p>Forms Y1901 and Y1903</p> <p>Form Y1905</p> <p>Orange- 3 ● 4 -Red White- 3 ● 4 -Black White- 1 ● 2 -Black Orange- 1 ● 2 -Red</p> <p>Green-  Green- </p> <p></p>	<p>Y1901 102.00</p> <p>Y1905 102.00</p> <p>Y1903 111.00</p>
<p>Dust Boot: Lever type limit (position) switch furnished with a boot around the shaft for additional protection against abrasive dusts, dirt, grit and sand. Available on all Type C and CR lever type switches</p> <p>Dust Boot Only: Can be field installed on any Type C and CR lever type switch. Class 9007 Type BT3, \$6.00 each.</p>		<p>Y33 9.50</p>
<p>Potted Limit (Position) Switch Or Plug-In Receptacle Only: With Individual Wires Single pole plug-in limit (position) switch or receptacle pre-wired with five #16 wires five feet long and wire entry completely sealed with Epoxy Resin</p> <p>Two pole plug-in limit (position) switch or receptacle pre-wired with nine #16 wires five feet long and wire entry completely sealed with Epoxy Resin.</p> <p>With STOWA Cord Single pole plug-in limit (position) switch or receptacle pre-wired with five conductor #16 STOWA cord eight feet long and wire entry completely sealed with Epoxy Resin</p> <p>Single Pole—Y1855: Same as Y1851 but with different wire color coding</p> <p>Two pole plug-in limit (position) switch or receptacle pre-wired with nine conductor #16 STOWA cord eight feet long and wire entry completely sealed with Epoxy Resin</p> <p>Two Pole—Y1856: Same as Y1852 but with different wire color coding</p> <p>Tamperproof Screws—Complete Switch Only With Individual Wires Same as Y1841 but with tamperproof screws on head and body</p> <p>Same as Y1842 but with tamperproof screws on head and body</p> <p>With STOWA Cord Same as Y1851 but with tamperproof screws on head and body</p> <p>Same as Y1852 but with tamperproof screws on head and body</p> <p>Same as Y1855 but with tamperproof screws on head and body</p> <p>Same as Y1856 but with tamperproof screws on head and body</p> <p>Other versions with different wiring diagrams per automotive requirements are available. Contact your local Square D field office.</p>	<p>Forms Y1851 and Y1853</p> <p>Forms Y1852 and Y1854</p> <p>Forms Y1855 and Y1857</p> <p>Forms Y1856 and Y1858</p> <p>Red- 3 ● 4 -Orange White- 1 ● 2 -Black Green- </p> <p>Orange- 4 ● 8 -Brown Red- 3 ● 7 -Yellow Black- 2 ● 6 -Blue White- 1 ● 5 -Pink Green- </p> <p>White- 3 ● 4 -Black Orange- 1 ● 2 -Red Green- </p> <p>Yellow- 4 ● 8 -Black Brown- 3 ● 7 -White Red- 2 ● 6 -Blue Orange- 1 ● 5 -Pink Green- </p> <p></p>	<p>Y1841 57.00</p> <p>Y1842 114.00</p> <p>Y1851 63.00</p> <p>Y1855 63.00</p> <p>Y1852 131.00</p> <p>Y1856 131.00</p> <p>Y1843 66.00</p> <p>Y1844 123.00</p> <p>Y1853 73.00</p> <p>Y1854 140.00</p> <p>Y1857 73.00</p> <p>Y1858 140.00</p>
<p>Conduit Seal Only (Field Installable): Conduit seal fits in conduit entrance and excludes liquids: 5 hole seal—Part #3103248801</p> <p>9 hole seal—Part #3103281501</p>		<p>1.70</p> <p>2.90</p>

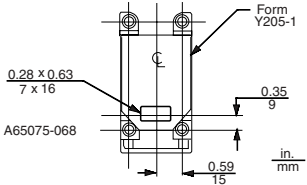

19 LIMIT SWITCHES

For additional information, reference Catalog #9006CT0101.

Factory Modifications (Forms)

Class 9007—Type C

Special Features (Do not apply to Types CF or CR unless noted)—Not Field Installable, Except Where Noted

Special Features	Form	Price Addition																																																																										
<p>Manifold Mounting: Receptacle is furnished with a wiring hole and a gasket on the base. Available on standard and compact types. Replaces existing Type B installations if new hole is drilled to match knockout. Supersedes Type C with Form Y205.</p> 	Y2051	\$19.10																																																																										
<p>Special Chemical Resistant Coating (Includes fluoroacarbon [VITON] seals—Y140, and stainless steel head and body screws)</p>	L3	74.00																																																																										
<p>Low Temperature—Lever Types Only: Limit (Position) switch will operate in an ambient temperature range of -40° F to 185° F (standard limit switch ambient temperature range is -20° F to 185° F). Minimum temperature is based on the absence of freezing moisture or water.</p>	Y128	19.10																																																																										
<p>Fluoroacarbon (VITON) Gaskets And Seals Substitution of fluoroacarbon (VITON) gaskets and seals on: Lever arm type, standard box (shaft seals on lever arm types are fluoroacarbon (VITON) as standard) Lever arm type, compact box (shaft seals on lever arm types are fluoroacarbon (VITON) as standard) Plunger type, standard box Plunger type, compact box Substitution of fluoroacarbon (VITON) boot only on plunger type switches.</p>	Y140 Y140 Y140 Y140 Y1401	34.80 19.10 47.60 31.70 9.50																																																																										
<p>Note: Fluoroacarbon (VITON) has been shown to resist sunlight aging problems.</p> <p>Direct Acting Contacts: One pole, normally closed, slow make-slow break, direct acting contact mechanism substituted for standard snap switch on Types C52, C54, CF53 and CR53 devices. This mechanism was designed for use in emergency overtravel applications. The movable contact of this basic switch unit is acted upon directly by the actuating mechanism of the limit switch and is not dependent upon the force exerted by a snap switch blade or spring to open the circuit. Because these contacts are slow make-slow break, they are best suited for applications where they are not actuated during normal operation, but only if abnormal overtravel is encountered.</p> <p>Note: Direct acting contacts described above are supplied on the 9007 CLS1 hoist overtravel switch as standard.</p>																																																																												
<p>Electrical Contact Ratings</p> <table border="1"> <thead> <tr> <th rowspan="3">Volts</th> <th colspan="5">AC—NEMA A600</th> <th colspan="4">DC</th> </tr> <tr> <th colspan="5">Max. Current—35% Power Factor</th> <th colspan="4">Maximum Current</th> </tr> <tr> <th colspan="2">Make</th> <th colspan="2">Break</th> <th rowspan="2">Continuous Carrying A</th> <th rowspan="2">Volts</th> <th colspan="2">Make or Break</th> <th rowspan="2">Continuous Carrying A</th> </tr> <tr> <th>A</th> <th>VA</th> <th>A</th> <th>VA</th> <th>A</th> <th>VA</th> </tr> </thead> <tbody> <tr> <td>120</td> <td>60</td> <td>7200</td> <td>6</td> <td>720</td> <td>10</td> <td>125</td> <td>1.1/0.55 ▲</td> <td>138/69 ▲</td> <td>5/2.5 ▲</td> </tr> <tr> <td>240</td> <td>30</td> <td>7200</td> <td>3</td> <td>720</td> <td>10</td> <td>...</td> <td>...</td> <td>...</td> <td>...</td> </tr> <tr> <td>480</td> <td>15</td> <td>7200</td> <td>1.5</td> <td>720</td> <td>10</td> <td>250</td> <td>0.27</td> <td>67.5</td> <td>2.5</td> </tr> <tr> <td>600</td> <td>12</td> <td>7200</td> <td>1.2</td> <td>720</td> <td>10</td> <td>600</td> <td>0.10</td> <td>60</td> <td>2.5</td> </tr> </tbody> </table> <p>▲ Type C52 compact unit ratings at 125 Vdc—same ratings as C54, CF53 and CR53 at other voltages.</p>  <p>Direct Acting Contact Mechanism (Shown without Cover)</p>	Volts	AC—NEMA A600					DC				Max. Current—35% Power Factor					Maximum Current				Make		Break		Continuous Carrying A	Volts	Make or Break		Continuous Carrying A	A	VA	A	VA	A	VA	120	60	7200	6	720	10	125	1.1/0.55 ▲	138/69 ▲	5/2.5 ▲	240	30	7200	3	720	10	480	15	7200	1.5	720	10	250	0.27	67.5	2.5	600	12	7200	1.2	720	10	600	0.10	60	2.5	Y1561	9.50
Volts		AC—NEMA A600					DC																																																																					
		Max. Current—35% Power Factor					Maximum Current																																																																					
	Make		Break		Continuous Carrying A	Volts	Make or Break		Continuous Carrying A																																																																			
A	VA	A	VA	A			VA																																																																					
120	60	7200	6	720	10	125	1.1/0.55 ▲	138/69 ▲	5/2.5 ▲																																																																			
240	30	7200	3	720	10																																																																			
480	15	7200	1.5	720	10	250	0.27	67.5	2.5																																																																			
600	12	7200	1.2	720	10	600	0.10	60	2.5																																																																			
Substitution of direct acting contact unit for snap switch of single pole switch																																																																												

Adapters—Field Installable

Description	Class 9007	Price
Switch with adapter plate permitting substitution of any Type C switch with standard box for any Type T switch with Style B baseplate	Form Y147	\$19.10 additional
Adapter Plate Kit only (plate plus mounting screws) for above	Type BT1	12.60
Adapter plate to allow direct substitution of Type C plunger switches for Type B plug-in plunger switches— use only if there is a problem in lining up cam tracks	Type CT10 ■ Type CT13 ◆	12.60 12.60
Adapter Plate Kit permitting direct substitution of any Type C lever arm switch with standard box for ANY Type AW lever arm switch	Type CT11	23.70
Conduit connection adapter—male 1/2" NPT on one end, female 20 mm on other end	Type CT12	34.80

■ Dimensions: 0.22" x 2.94" x 1.54"
◆ Dimensions: 0.22" x 2.07" x 1.54"

Mushroom Button For Palm Operated Turret Head

Also see Type C Palm Operated Switches

Color	1 3/8" Dia. Button Type No.	2 1/4" Dia. Button Type No.	Price
Black	2358C6G3	...	\$28.50
Red	2358C6G2	2358C22G3	28.50
Green	2358C6G6	2358C22G6	28.50
Yellow	2358C6G8	2358C22G8	28.50

For additional information, reference Catalog #9006CT0101.

Standard roller is hardened oil-impregnated sintered iron.
Bold face type numbers indicate the most commonly used lever arms.

Cast Zinc Lever Arms

Length of Arm (A)	Roller																	
	Standard 3/4" Dia. (B) 1/4" Wide (C)		Standard 3/4" Dia. (B) 5/8" Wide (C)		Standard 5/8" Dia. (B) 1/4" Wide (C)		Standard 5/8" Dia. (B) 5/8" Wide (C)		Nylon 3/4" Dia. (B) 1/4" Wide (C)		Nylon 5/8" Dia. (B) 1/4" Wide (C)		Nylon 5/8" Dia. (B) 5/8" Wide (C)		Nylon 1" Dia. (B) 5/8" Wide (C)			
	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price		
7/8"	BA11	\$14.30	BA12	\$23.70	AA1	\$23.70	AA2	\$23.70	BA18	\$14.30	AA8	\$23.70	AA17	\$23.70	BA13	\$23.70		
1 1/2"	MA11	14.30	MA12	23.70	MA1	14.30	MA2	23.70	MA18	14.30	MA8	14.30	MA17	23.70	MA13	23.70		
2"	CA11	23.70	CA12	23.70	CA1	23.70	CA2	23.70	CA18	23.70	CA8	23.70	CA17	23.70	CA13	23.70		
2 1/2"	DA11	23.70	DA12	23.70	DA1	23.70	DA2	23.70	DA18	23.70	DA8	23.70	DA17	23.70	DA13	23.70		
3"	EA11	23.70	EA12	23.70	EA1	23.70	EA2	23.70	EA18	23.70	EA8	23.70	EA17	23.70	EA13	23.70		
Length of Arm (A)	Nylon 1" Dia. (B) 1/4" Wide (C)		Ball Bearing 1 1/16" Dia. (B) 1/4" Wide (C)		Standard 3/4" Dia. (B) 1/4" Wide (C) Roller on Opposite Side to Standard		Standard 5/8" Dia. (B) 1/4" Wide (C) Roller on Opposite Side to Standard		Standard 5/8" Dia. (B) 5/8" Wide (C) Roller on Opposite Side to Standard		Without Roller		Standard 3/4" Dia. (B) 1/4" Wide (C) (Countersunk Roller Pin)		Cable Operated With Eyebolt (5/8" I.D.) Instead of Roller			
	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price		
	7/8"	BA4	\$33.30	BA9	\$33.30	BA15	\$14.30	BA5	\$23.70	BA6	\$23.70	AA0	\$23.70	MA31	\$14.30	MA22	\$23.70	
1 1/2"	MA4	33.30	MA9	33.30	MA15	14.30	BA5	14.30	BA6	23.70	BA0	23.70	MA0	23.70	CA31	23.70	DA31	23.70
2"	CA4	33.30	CA9	33.30	CA15	23.70	CA5	23.70	CA6	23.70	CA0	23.70	DA0	23.70	EA0	23.70		
2 1/2"	DA4	33.30	DA9	33.30	DA15	23.70	DA5	23.70	DA6	23.70								
3"	EA4	33.30	EA9	33.30	EA15	23.70	EA5	23.70	EA6	23.70								



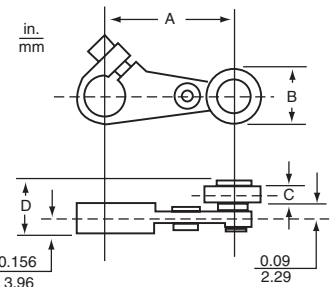
Cast Lever Arm

Flat Steel Lever Arms

Length of Arm (A)	Roller									
	Standard 5/8" Dia. (B) 1/4" Wide (C)		Standard 3/4" Dia. (B) 5/8" Wide (C)		Nylon 3/4" Dia. (B) 1/4" Wide (C)		Nylon 1" Dia. (B) 1/4" Wide (C)		None	
	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price
7/8"	AA1S	\$23.70	AA2S	\$23.70	MA18S	\$14.30	BA4S	\$33.30	AA0S	\$23.70
1 1/2"	BA1S	14.30	BA2S	23.70	CA1S	23.70	CA2S	23.70	CA0S	23.70
2"	CA1S	23.70	CA2S	23.70	DA1S	23.70	DA2S	23.70	DA0S	23.70
2 1/2"	DA1S	23.70	DA2S	23.70	EA1S	23.70	EA2S	23.70	EA0S	23.70
3"	EA1S	23.70	EA2S	23.70						



Flat Steel Lever Arm



Cast Zinc Lever Arm Dimensions

A = Length of Lever Arm
B = Roller Diameter
C = Roller Width
D = C + 7/16"

See price tables for A, B and C dimensions.
Approximate shipping weights range from 1/8 lb. to 1/4 lb.

90° Forked Cast Zinc Lever Arms

Roller Position	Standard 3/4" Dia. (B) 1/4" Wide (C) Rollers		Standard 5/8" Dia. (B) 1/4" Wide (C) Rollers		Nylon 3/4" Dia. (B) 1/4" Wide (C) Rollers		Nylon 1" Dia. (B) 1/4" Wide (C) Rollers		Ball Bearing 1 1/16" Dia. (B) 1/4" Wide (C) Rollers	
	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price
Rollers on Same Side	LA4		LA1		LA16		LA10	\$23.70	LA7	\$33.30
R.H. Roller on Opp. Side	LA5		LA2		LA17		LA11	23.70	LA8	33.30
L.H. Roller on Opp. Side	LA6		LA3		LA18		LA12	23.70	LA9	33.30



90° Forked Arm 1 1/2" Length

One-Way Cast Zinc Roller Lever Arm

Length of Arm	1 1/4" Dia. (B) 1/4" Wide (C) Roller			
	Cast Arm		Flat Steel Arm	
	Type	Price	Type	Price
1 3/8"	BA3	\$42.80	BA3S	\$42.80
1 1/2"	MA3	42.80	CA3S	42.80
2"	CA3	42.80	DA3S	42.80
2 1/2"	DA3	42.80	EA3S	42.80
3"	EA3	42.80		



One-Way Roller Lever Arm

Offset Type Cast Zinc Lever Arms

Type	Std. Roller		Type	Price
	Dia. (B)	Width (C)		
Offset Lever Arm 2" Length 7/16" Offset	5/8"	1/4"	KA1	\$23.70
	5/8"	5/8"	KA2	23.70
	3/4"	1/4"	KA11	23.70
	3/4"	5/8"	KA12	23.70
1 1/2" Length 7/8" Offset	11/16"	1/4"	KA9	33.30
	3/4"	1/4"	KA18	23.70
Std. Roller	Dia. (B)	Width (C)	Type	Price
			3/4"	1/4"	KB11	$23.70
			KB15	23.70



Offset Lever Arm 2" Length 7/16" Offset

One-Way Lever Arms

Length of Arm	Roller						Rod Type	
	Standard 3/4" Dia. (B) 1/4" Wide (C)		Nylon 3/4" Dia. (B) 1/4" Wide (C)		Ball Bearing 1 1/16" Dia. (B) 1/4" Wide (C)		Type	Price
	Type	Price	Type	Price	Type	Price	Type	Price
1 1/2"	RA11	\$77.00	RA18	\$77.00	RA9	\$95.00	FA2	\$48.00
5"	...	...	...	...	...	...



One-Way Lever Arm

▲ Recommended in place of Types BA7, CA7, DA7, EA7 and MA7 lever arms with steel rollers.
If necessary, the latter arms can be furnished at \$24.30 each.
■ Roller inside.

For additional information, reference Catalog #9006CT0101.

Lever Arms

Class 9007—Types AW and C



www.SquareD.com

For the most up-to-date information

Standard roller is hardened oil-impregnated sintered iron.
 Bold face type numbers indicate the most commonly used lever arms.

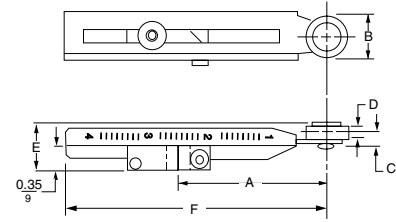
Adjustable Length Lever Arms

Description	Adjustable Length Lever Arm Adj. from 7/8" to 4"												
					Roller								
	Standard 5/8" Dia. 1/4" Wide	Standard 5/8" Dia. 5/8" Wide	Nylon 5/8" Dia. 1/4" Wide	Without Roller	Price	Ball Brg. 1 1/16" Dia. 1/4" Wide	Nylon ▲ 1" Dia. 5/8" Wide	DELTRIN 15/8" Dia. 1/4" Wide	Price	Nylon 2" Dia. 1/4" Wide	Rubber Tire 2 1/8" Dia. 1 1/2" Wide	Price	
	Type	Type	Type	Type		Type	Type	Type		Type	Type	Type	Type
Non-bendable	HA1	HA2	HA4	HA0	\$23.70	HA24	HA22	...	\$33.30	...	...	...	...
Bendable	HA5	HA6	HA8	HA9	23.70	HA25	HA23	HA20	33.30	HA26	\$48.00	HA21	\$42.80

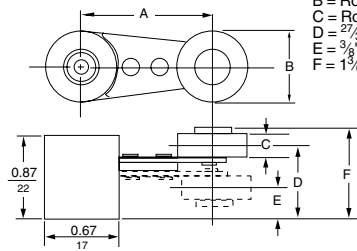
▲ Recommended in place of Types HA3 and HA7 lever arms with steel rollers. If necessary these arms can be furnished at \$21.00 each.

360° Angular Adjustable Lever Arms

360° Angular Adjustable Lever Arm	Length of Arm	Roller (can be changed in the field from roller outside to roller inside position or vice versa)							
		Standard 5/8" Dia. 1/4" Wide		Standard 3/4" Dia. 1/4" Wide		Nylon 5/8" Dia. 1/4" Wide		Ball Bearing 1 1/16" Dia. 1/4" Wide	
		Roller Outside	Roller Inside	Roller Outside	Roller Outside	Roller Outside	Roller Outside	Roller Outside	Price
		Type	Type	Type	Type	Type	Type	Type	Price
7/8"	AA1M	AA5M	AA11M	AA8M	AA18M	AA9M	\$71.00	AA9M	\$83.00
1 1/8"	BA1M	BA5M	BA11M	BA8M	BA18M	BA9M	71.00	BA9M	83.00
1 1/2"	MA1M	MA5M	MA11M	MA8M	MA18M	MA9M	71.00	MA9M	83.00
2"	CA1M	CA5M	CA11M	CA8M	CA18M	CA9M	71.00	CA9M	83.00
2 1/2"	DA1M	DA5M	DA11M	DA8M	DA18M	DA9M	71.00	DA9M	83.00
3"	EA1M	EA5M	EA11M	EA8M	EA18M	EA9M	71.00	EA9M	83.00



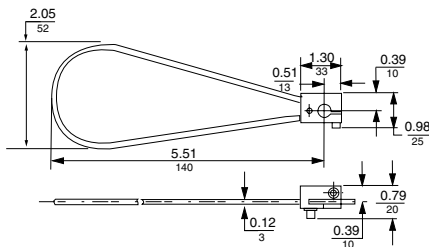
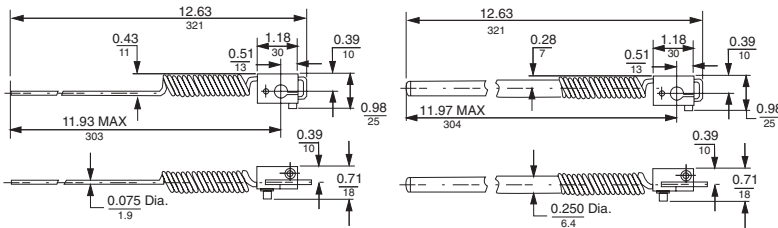
A = Length of Lever Arm
 B = Roller Diameter
 C = Roller Width
 D = 27/32"
 E = 3/8"
 F = 1 1/64"



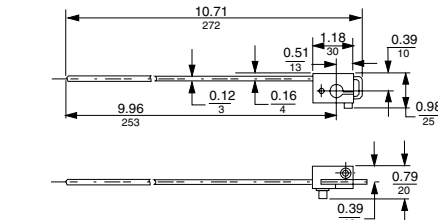
Approximate shipping weights range from 1/8" lb. to 1/4 lb.

Rod Type Lever Arms

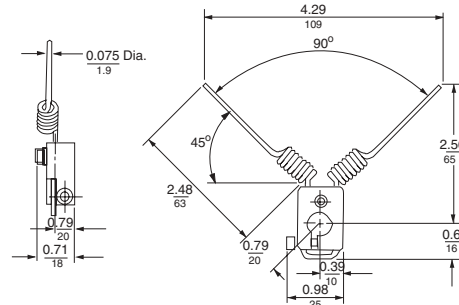
Rod Type Lever Arm	Rod	Type	Price
10" Stainless Steel Rod 12" Spring Rod, Steel 12" Spring Rod, DELTRIN Looped Rod Arm	10" Stainless Steel Rod	FA1	\$23.70
	12" Spring Rod, Steel	FA3	23.70
	12" Spring Rod, DELTRIN	FA5	33.30
	Looped Rod Arm	FA6	23.70
90° Forked Rod 2 1/2" Spring Rods, Steel		LA19	33.30



Dual Dimensions: INCHES
 Millimeters



Type FA1



Type LA19

For additional information, reference Catalog #9006CT0101.

Rated Power

Conforms to IEC 947-5-1, duty categories AC15 and DC13.

Temperature range	-13° F to 158° F (-25° C to 70° C); optional -40° F to +248° F (-40° C to 120° C). The minimum temperatures listed are based on the absence of freezing moisture or water.
Enclosure rating	NEMA 1,2,3,4,12 IEC Type IP66
Vibration resistance	25 G (10-500 Hz), conforming to IEC 68-2-6
Shock resistance	50 G, conforming to IEC 68-2-27
Repeatability (max.)	0.0004" (0.01mm)
Cable entry	1/2" NPT standard

Contact Characteristics

Rated thermal current	10 A, conforming to UL 508, CSA C22-2 No.14, IEC 337-1, NFC 63-140, VDE 0660-200
Rated insulation voltage	Non-plug-in: 300 Vac (A300) and DC (Q300) Plug-in: 600 Vac (A600) and DC (Q600)
Contact resistance (max)	Non plug-in: 25 m Ω Plug-in: 45 m Ω
Cable (max.)	2 x #16 AWG (1.5 mm ²) per terminal—1 x #16 AWG for 2 SPDT (2 N.O. - 2 N.C.)
Short circuit protection	10 A fuse type SC; Form I Class J or equivalent. Outside US use type gl or N.

Complete Switches
XCKJ
Non Plug-in Housings▲

Description Functional Diagram	Operating Torque	Contact Type	Direct Opening ♦	Catalog Number	Price	
Lever operated	DELTRIN roller lever adjustable in 5° or 45° increments (reversible mountings) ■					
	33.3 in-oz	SPDT	(N.O. + N.C.)	Y	XCKJ10511	\$84.00
	33.3 in-oz	2 SPDT	(2 N.O. + 2 N.C.)	N	XCKJ20511	99.00
	Adjustable length DELTRIN roller lever adjustable in 5° or 90° increments					
	33.3 in-oz	SPDT	(N.O. + N.C.)	Y	XCKJ10541	84.00
	33.3 in-oz	2 SPDT	(2 N.O. + 2 N.C.)	N	XCKJ20541	99.00
	Adjustable length —1/8" diameter steel rod adjustable in 5° or 45° increments					
	33.3 in-oz	SPDT	(N.O. + N.C.)	Y	XCKJ10553	84.00
	Adjustable length 1/4" plastic rod adjustable in 5° or 45° increments					
	33.3 in-oz	SPDT	(N.O. + N.C.)	Y	XCKJ10559	91.00

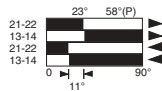
- ▲ 2 or 3 subassemblies in a single referenced package. Other complete switches are available. Assembled switches can also be provided. Contact your Square D/Telemecanique representative for details.
- Reverse mounting: The higher increment (45° or 90°) is a positive opening contact feature which ensures no loss of mechanical effort between the actuation point and the moving contact bridge of the direct opening (N.C.) contact even if the lever is loosely mounted on the head shaft.
- ♦ Direct opening contacts meet IEC 947-5-1 requirements for positive opening contacts.



XCKJ10511



XCKJ10541



For additional information, reference Catalog #9006CT0101.

Neutral Position ▲

One SPDT contact switch per direction. Past 20° CW, contact 1 (11-12/13-14) switches. Past 20° CCW, contact 2 (21-22/23-24) switches. Levers not included.



XCKJ161

	26.6 in-oz	2 SPDT (2 N.O. + 2 N.C.)	N	ZCKJ404	\$107.00
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Plunger Operated

	Rod plunger 48 oz.	SPDT	(N.O. + N.C.)	Y	XCKJ161	77.00
	Steel roller plunger 48 oz.	SPDT	(N.O. + N.C.)	Y	XCKJ167	83.00



XCKJ167

Plug-in Housings ▲

Description Functional Diagram	Operating Torque	Contact Type	Direct Opening ♦	Catalog Number	Price	
Lever Operated	DELTRIN roller lever adjustable in 5° or 45° increments (reversible mountings) ■					
	33.3 in-oz	SPDT	(N.O. + N.C.)	N	XCKJ110511	\$84.00
Adjustable length DELTRIN roller lever adjustable in 5° or 90° increments						
	33.3 in-oz	SPDT	(N.O. + N.C.)	N	XCKJ110541	84.00



XCKJ110511

Neutral Position ▲

One SPDT contact switch per direction. Past 20° CW, contact 1 (11-12/13-14) switches. Past 20° CCW, contact 2 (21-22/23-24) switches. Levers not included.



XCKJ1167

	26.6 in-oz	2 SPDT	(2 N.O. + 2 N.C.)	N	ZCKJ4104	\$107.00
Plunger Operated	Rod plunger 48 oz	SPDT	(N.O. + N.C.)	N	XCKJ1161	77.00
	Steel roller plunger 48 oz	SPDT	(N.O. + N.C.)	N	XCKJ1167	83.00

- ▲ 2 or 3 subassemblies in a single referenced package. Other complete switches are available. Assembled switches can also be provided. Contact your Square D/Telemecanique representative for details.
- Reverse mounting: The higher increment (45° or 90°) is a positive opening contact feature which ensures no loss of mechanical effort between the actuation point and the moving contact bridge of the direct opening (N.C.) contact even if the lever is loosely mounted on the head shaft.
- ♦ Direct opening contacts meet IEC 947-5-1 requirements for positive opening contacts.



File E39281
CCN NKCR



File LR 44087
Class 3211-03



Acceptable Wire Sizes 14-24 AWG
 Recommended Terminal
 Clamp Torque13 in-lb

For additional information, reference Catalog #9006CT0101.

Non plug-in



ZCKJ1

Silver Contacts (10 A)				Direct Opening▲	Catalog Number	Price
1 Step	SPDT	(N.O. + N.C.)	Snap action	Y	ZCKJ1	\$ 47.
1 Step	SPDT	(isolated N.O. + N.C.)	Slow break-before-make	Y	ZCKJ5	56.
1 Step	2 SPDT	(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ2	62.
2 Step	2 SPDT	(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ4	68.

Gold Flashed Contacts (low power circuits max. 12 V, 0.1 A)

1 Step	SPDT	(N.O. + N.C.)	Snap action	Y	ZCKJ18	70.
1 Step	2 SPDT	(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ28	73.

High Temperature: +248° F (120° C) ■

1 Step	SPDT	(N.O. + N.C.)	Snap action	Y	ZCKJ15	60.
1 Step	2 SPDT	(N.O. + N.C.)	Snap action	N	ZCKJ25	76.
Neutral Position 2 SPDT ♦		(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ4045	120.

Plug-in



ZCKJ11

Silver Contacts (10A)						
1 Step	SPDT	(N.O. + N.C.)	Snap action	N	ZCKJ11	47.
1 Step	2 SPDT	(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ21	62.
2 Step	2 SPDT	(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ41	68.

High Temperature: +248° F (120° C) ■

1 Step	SPDT	(N.O. + N.C.)	Snap action	N	ZCKJ115	60.
1 Step	2 SPDT	(2 N.O. + 2 N.C.)	Snap action	N	ZCKJ215	76.
Neutral Position 2 SPDT (2 N.O. + 2 N.C.) ♦			Snap action	N	ZCKJ41045	120.

Wiring Options

	Catalog Number	Pins	Suffix	Price Adder
Mini style male receptacle	ZCKJ1/J11/J5	5 pins	547	\$ 68.
	ZCKJ2/J4/J21/J41	9 pins	947	102.

Plug and Cable Assemblies

Matching plug and cable assemblies for the mini style receptacle options may be ordered as follows:

Description	Pins	Matches Receptacle Option	Catalog Number	Price
Plug and 3' cable	5	547	BH2053	\$ 63.
Plug and 6' cable	5	547	BH2056	86.
Plug and 12' cable	5	547	BH20512	137.
Plug and 3' cable	9	947	BH2093	128.
Plug and 6' cable	9	947	BH2096	228.
Plug and 12' cable	9	947	BH20912	353.

▲ Direct opening contacts meet IEC 947-5-1 requirements for positive opening contacts.

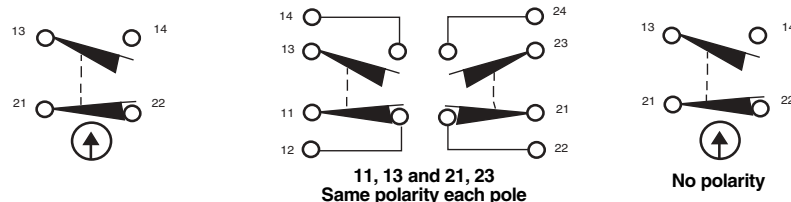
■ No special option for low temperature. Standard model bodies can be used down to -40° F (-40° C)

♦ 2 or 3 subassemblies in a single referenced package. Other complete switches are available. Assembled switches can also be provided. Contact your Square D/Telemecanique representative for details.

Electrical Wiring

ZCKJ1, J11★	ZCKJ2, J21, J4, J41	ZCKJ5
Single pole, double throw 1 N.O. - 1 N.C. Direct opening snap action (J1 non-plug-in only)	2 Single pole, double throw 2 N.O. + 2 N.C. Snap action contact Not direct opening	Single pole, double throw isolated N.O., N.C. Direct opening contact slow make slow break

Wiring Diagrams



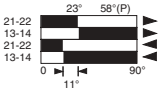
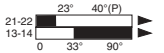
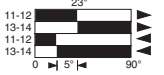
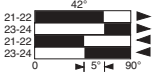
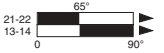
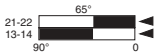
★ For ZCKJ11, terminals 21 and 22 become 11 and 12, same polarity.



Acceptable Wire Sizes 14–24 AWG
Recommended Terminal
Clamp Torque 13 in-lb

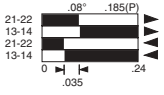
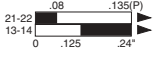
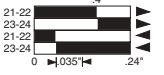
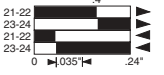
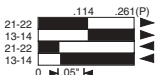
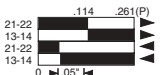
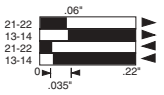
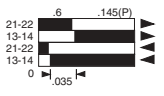
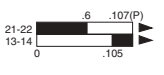
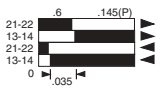
For additional information, reference Catalog #9006CT0101.

Lever Operating Heads

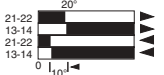
Contact Operation with Switch Bodies:	1 Step	2 Step	1 Step	Operating Force/Torque	Catalog Number	Price
	ZCKJ1, J11, J2, J21	ZCKJ4, J41	ZCKJ5			
Standard operation 1 Step CW and /or CCW				33 in-oz, 0.25 N	ZCKE05	\$29.50
2 Step 11-12, 13-14 first step						
21-22, 23-24 second step						
Maintained operation	 			33 in-oz, 0.25 N	ZCKE09	39.30

Neutral Position—Heads are not available separately. Order complete switches from page 19-12.

Plunger Operated Heads

Contact Operation with Switch Bodies:	1 Step	2 Step	1 Step	Operating Force/Torque	Catalog Number	Price
	ZCKJ1,J11,J2,J21	ZCKJ4, J41	ZCKJ5			
Top rod plunger				48 oz. 18 N	ZCKE61	\$29.50
Ball bearing top plunger				48 oz. 18 N	ZCKE66	36.00
Steel roller plunger				48 oz. 18 N	ZCKE67	36.00
One-way DELRIN roller ■				48 oz. 18 N	ZCKE21 ZCKE21	32.80 32.80
One way steel roller ■				48 oz. 18 N	ZCKE23	32.80
Side rod plunger				48 oz. 18 N	ZCKE63	36.00
Side steel roller plunger-horizontal ■				48 oz. 18 N	ZCKE64	42.50
Side steel roller plunger-vertical ■				48 oz. 18 N	ZCKE65	42.50

Omnidirectional Heads ▲

Cat whisker-steel ▲				18.4 in-oz, 0.13N	ZCKE06	29.50
Wobble coil springs ▲				18.4 in-oz, 0.13N	ZCKE08	29.50

▲ Flexible operators will not guarantee direct (positive) opening operation.
■ Actuation by 30° cam.

For additional information, reference Catalog #9006CT0101.

Operating Heads—for extended temperature ranges

Type		Catalog Number Low temperature ▲ -40° F to +158° F (-40° C to +70° C)	Catalog Number High temperature ▲ -13° F to 248° F (-25° C to 120° C)	Price
Lever operated	Standard operations	ZCKE056	ZCKE055	\$42.50
	Maintained operations	ZCKE096	ZCKE095	53.00
Plunger operated	Top rod plunger	ZCKE616	ZCKE615	53.00
	Ball bearing top plunger	ZCKE666	ZCKE665	49.20
	Top roller plunger	ZCKE676	ZCKE675	49.20
	One way DELRIN roller	ZCKE216	ZCKE215	45.90
	One way steel roller	ZCKE236	ZCKE235	45.90
	Side rod plunger	ZCKE636	ZCKE635	49.20
	Side steel roller plunger-horizontal	ZCKE646	ZCKE645	56.00
	Side steel roller plunger-vertical	ZCKE656	ZCKE655	37.20
Omnidirectional	Cat whisker	ZCKE066	ZCKE065	42.50
	Wobble coil spring	ZCKE086	ZCKE085	42.50

▲ The minimum temperatures listed are based on the absence of freezing moisture or water.

Non-Plug in Style Contact Block



XE2SP2151

Replacement Parts

Description	Direct Opening ■	Catalog Number	Price
Contact block for ZCKJ1	Y	XE2SP2151	\$24.00
Contact block for ZCKJ2	N	XE2SP2021	29.50
Contact block for ZCKJ4	N	XE2SP2031	47.00
Contact block for ZCKJ5	Y	XE2NP2151	27.30
Contact block for ZCKJ18	Y	XE2SP2158	24.00
Contact block for ZCKJ28	N	XE2SP2028	29.50
Plug-in module for ZCKJ11 (includes contact block)	N	ZCKJ01	36.00
Plug-in module for ZCKJ21 (includes contact block)	N	ZCKJ02	50.00
Plug-in module for ZCKJ41 (includes contact block)	N	ZCKJ04	57.00
Base receptacle for ZCKJ11	...	ZCKJ019	17.50
Base receptacle for ZCKJ21	...	ZCKJ029	20.70
Base receptacle for ZCKJ41	...	ZCKJ029	20.70

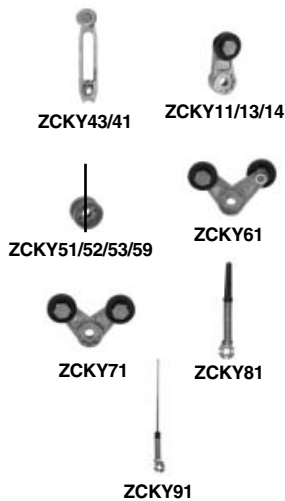
■ Direct opening contacts meet IEC 947-5-1 requirements for positive opening contacts.

Lever Arms

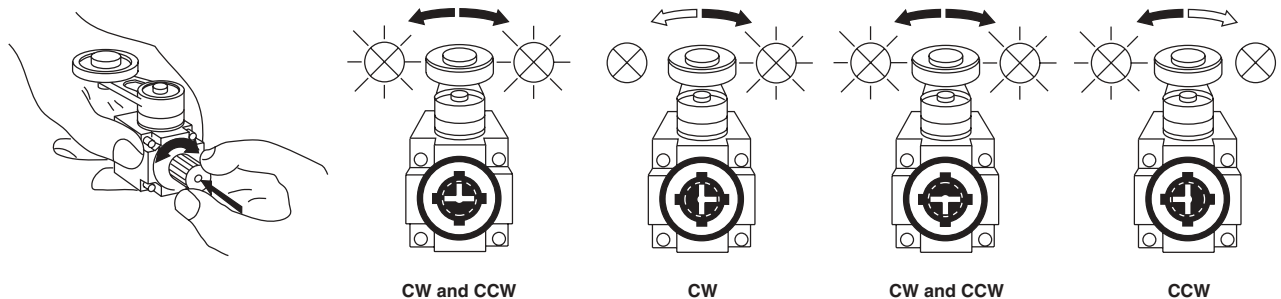
Description	Adjustment Increments	Catalog Number	Price
DELRIN roller 0.9" diameter, 0.2" wide, 1.6" long	5° or 45° ★	ZCKY11	\$ 7.70
Steel roller 0.9" diameter, 0.2" wide, 1.6" long	5° or 45° ★	ZCKY13	7.70
Ball bearing roller 0.9" diameter, 0.2" wide, 1.6" long	5° or 45° ★	ZCKY14	20.70
Adjustable DELRIN roller, 0.74" diameter, 0.2" wide, 3" long (max.)	5° or 90°	ZCKY41	7.70
Adjustable steel roller, 0.74" diameter, 0.2" wide, 3" long (max.)	5° or 90°	ZCKY43	7.70
Adjustable rod-square, steel, 1/8" side, 5.4" long (max.)	5° or 45°	ZCKY51	7.70
Adjustable rod-round, fiberglass, 1/8" diameter, 5.4" long (max.)	5° or 45°	ZCKY52	7.70
Adjustable rod-round, steel, 1/8" diameter, 5.4" long (max.)	5° or 45°	ZCKY53	7.70
Adjustable rod-round, plastic, 1/4" diameter, 8.4" long (max.)	5° or 45°	ZCKY59	7.70
Fork, 2 track, DELRIN roller, 0.9" diameter, 0.2" wide for ZCK-E09	5° or 45° ★	ZCKY61	14.20
Fork, 1 track, DELRIN roller, 0.9" diameter, 0.2" wide for ZCK-E09	5° or 45° ★	ZCKY71	14.20
Coil spring lever ♦	5° or 90°	ZCKY81	7.70
Spring rod lever ♦	5° or 90°	ZCKY91	7.70

♦ Flexible operators will not guarantee positive opening operation.

★ Reverse mounting: The higher increment (45°) is a direct (positive) opening contact feature which ensures no loss of mechanical effort between the actuation point and the moving contact bridge of the direct (positive) contact (N.C.) even if the lever is loosely mounted.



ZCKE05 Programming



For additional information, reference Catalog #9006CT0101.

Osiswitch Limit Switches

Complete Switches

Miniature Type XCMD Metal, Precabled

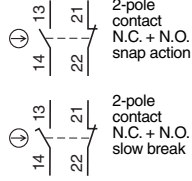







Farnell Codes: 4254569 - 4594

	Steel Roller Plunger	Price	Plastic Roller Lever	Price	Variable Length Plastic Roller Lever	Price	M12 Head Steel Roller Plunger	Price	Cat Wisker	Price	End Plunger	Price	
Osisconcept® Offering simplicity through Innovation XCMD, XCMN 													
Actuation speed (in m/s)	0.5		1.5		1.5		0.1		1		0.5		
Switches conforming to standard IEC 60 947-5-1 section 3 ▲	yes		yes		yes		yes		...		yes		
Degree of protection conforming to IEC 60 529	IP66 and IP67		IP66 and IP67		IP66 and IP67		IP66 and IP67		IP66 and IP67		IP65		
Rated operational characteristics	Vac 15; B 300 (Ue = 240 V, Ie = 1.5 A) / Vdc 13; R 300 (Ue = 250 V, Ie = 0.1 A)												
Cable entry	pre-cabled, adjustable direction, length = 1 m (other lengths available on request)										pre-cabled length = 1 m		
Mounting holes—in (mm)	0.79 (20)		0.79 (20)		0.79 (20)		0.79 (20)		0.79 (20)		0.79 (20)		
Body dimensions—in (mm) W x D x H	1.18 x 0.63 x 2.32 (30 x 16 x 59)		1.18 x 0.63 x 2.32 (30 x 16 x 59)		1.18 x 0.63 x 2.32 (30 x 16 x 59)		1.18 x 0.63 x 2.32 (30 x 16 x 59)		1.18 x 0.63 x 2.32 (30 x 16 x 59)		1.18 x 0.63 x 2.32 (30 x 16 x 59)		
Complete switch	2-pole, N.C. + N.O. snap action	XCMD2102L1	\$81.	XCMD2115L1	\$71.	XCMD2145L1	\$91.	XCMD21F2L1	\$91.	XCMD2106L1	\$72.	XCMN2110L1 ■	\$46.
	2-pole, N.C. + N.O. break before make, slow break	XCMD2502L1	83.	XCMD2515L1	73.	XCMD2545L1	93.	XCMD25F2L1	93.	XCMD2506L1	74.

Compact Type XCKD Metal and XCKP Plastic Conforming to Standard EN 50047

Farnell Codes : Metal 4253772 - 3784

:Plastic 4253711 - 3723

	Metal End Plunger	Price	Plastic Roller Lever Horizontal Actuation	Price	M18 Head Metal End Plunger	Price	Plastic Roller Lever	Price	Variable Length Plastic Roller Lever	Price	Rubber Roller Lever Ø 50 mm	Price	Cat Wisker	Price
XCKP 														
Actuation speed (in m/s)	0.5		1		0.5		1.5		1.5		1.5		1	
Switches conforming to standard IEC 60 947-5-1 section 3 ▲	yes		yes		yes		yes		yes		yes		...	
Degree of protection conforming to IEC 60 529	IP66 and IP67		IP66 and IP67		IP66 and IP67		IP66 and IP67		IP66 and IP67		IP66 and IP67		IP66 and IP67	
Rated operational characteristics	Vac 15; A 300 (Ue = 240 V, Ie = 3 A) / Vdc 13; Q 300 (Ue = 250 V, Ie = 0.27 A)													
Cable entry	1 tapped entry for 1/2" NPT cable gland													
Mounting holes (mm)	20		20		M18 x 1		20		20		20		20	
Body dimensions (mm) W x D x H	30 x 30 x 73		30 x 30 x 73		30 x 30 x 73		30 x 30 x 73		30 x 30 x 73		30 x 30 x 73		30 x 30 x 73	

Metal products

Complete switch	2-pole, N.C. + N.O. snap action	XCKD2110N12	\$37.70	XCKD2121N12	\$59.80	XCKD21H0N12	\$72.80	XCKD2118N12	\$48.80	XCKD2145N12	\$48.80	XCKD2139N12	\$48.80	XCKD2106N12	\$48.10
	2-pole, N.C. + N.O. break before make, slow break	XCKD2510N12	41.60	XCKD2521N12	63.70	XCKD25H0N12	76.70	XCKD2518N12	50.70	XCKD2545N12	50.70	XCKD2539N12	53.30	XCKD2506N12	52.00

Plastic, double insulated products


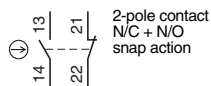



Complete switch	2-pole, N.C. + N.O. snap action	XCKP2110N12	29.00	XCKP2121N12	46.00	XCKP21H0N12	56.00	XCKP2118N12	36.00	XCKP2145N12	36.00	XCKP2139N12	38.00	XCKP2106N12	37.00
	2-pole, N.C. + N.O. break before make, slow break	XCKP2510N12	32.00	XCKP2521N12	49.00	XCKP25H0N12	59.00	XCKP2518N12	39.00	XCKP2545N12	39.00	XCKP2539N12	41.00	XCKP2506N12	40.00

▲ Indicates positive opening contacts.
■ XCMN switch is not modular.


For additional information, reference Catalog #9006CT0101.

Farnell Codes: 4253814 - 4557

Type XCKT Compact, Plastic, 2 Cable Entries

	Metal End Plunger	Price	Metal Roller Plunger	Price	Plastic Roller Lever	Price	
 Offering simplicity through innovation XCKT  2-pole contact N/C + N/O snap action							
Actuation speed (in m/s)	0.5		0.5		1.5		
Switches conforming to standard IEC 60 947-5-1 section 3 ▲	yes		yes		yes		
Degree of protection conforming to IEC 60 529	IP66 and IP67		IP66 and IP67		IP66 and IP67		
Rated operational characteristics	Vac 15; A 300 (Ue = 240 V, Ie = 3 A) / Vdc 13; Q 300 (Ue = 250 V, Ie = 0.27 A)						
Cable entry	2 tapped entries for 1/2" NPT cable gland						
Mounting holes—in (mm)	0.79 or 1.57 (20 or 40)		0.79 or 1.57 (20 or 40)		0.79 or 1.57 (20 or 40)		
Body dimensions—in (mm) W x D x H	2.36 x 1.18 x 2.4 (60 x 30 x 61)		2.36 x 1.18 x 2.4 (60 x 30 x 61)		2.36 x 1.18 x 2.4 (60 x 30 x 61)		
Complete switch	2-pole, N.C. + N.O. snap action	XCKT2110N12	\$31.	XCKT2102N12	\$48.	XCKT2118N12	\$38.

With Manual Reset XCPR and XCDR

	Metal End Plunger	Price	Plastic Roller Lever Horizontal Actuation	Price	Plastic Roller Lever Vertical Actuation	Price	
							
Actuation speed (in m/s)	0.5		1		1		
Switches conforming to standard IEC 60 947-5-1 section 3 ▲	yes		yes		yes		
Degree of protection conforming to IEC 60 529	IP66 and IP67		IP66 and IP67		IP66 and IP67		
Rated operational characteristics	Vac 15; A 300 (Ue = 240 V, Ie = 3 A) / Vdc 13; Q 300 (Ue = 250 V, Ie = 0.27 A)						
Cable entry	1 tapped entry for 1/2" NPT cable gland						
Mounting holes—in (mm)	0.79 (20)		0.79 (20)		0.79 (20)		
Body dimensions—in (mm) W x D x H	1.18 x 1.18 x 3.74 (30 x 30 x 95)		1.18 x 1.18 x 3.74 (30 x 30 x 95)		1.18 x 1.18 x 3.74 (30 x 30 x 95)		
Metal products							
Complete switch	2-pole, N.C. + N.O. snap action	XCDR2110N12	\$45.50	XCDR2121N12	\$71.50	XCDR2127N12	\$71.50
	2-pole, N.C. + N.O. break before make, slow break	XCDR2510N12	49.40	XCDR2521N12	76.70	XCDR2527N12	76.70
Plastic, double insulated products							
Complete switch	2-pole, N.C. + N.O. snap action	XCPR2110N12	35.00	XCPR2121N12	55.00	XCPR2127N12	55.00
	2-pole, N.C. + N.O. break before make, slow break	XCPR2510N12	38.00	XCPR2521N12	59.00	XCPR2527N12	59.00

▲ Indicates positive opening contacts.

For additional information, reference Catalog #9006CT0101.

Osiswitch Limit Switches

Common Heads and Levers for Miniature and Compact Bodies



www.SquareD.com

For the most up-to-date information

Metal Plunger and Multi-directional Heads

Description	Metal End Plunger	Metal End Plunger with Elastomer Protective Boot	Steel Roller Plunger	Retractable Steel Roller Lever	Plastic Roller Lever, Horizontal Actuation	Plastic Roller Lever, Vertical Actuation
Catalog No.	ZCE10	ZCE11	ZCE02	ZCE24	ZCE21	ZCE27
Price	\$9	\$14	\$26	\$27	\$26	\$26

Description	M12 Head Metal Plunger	M18 Head Metal Plunger	M12 Head Steel Roller Plunger	M18 Head Steel Roller Plunger	Spring Lever	Spring Lever with Plastic End	Cat Wisker
Catalog No.	ZCEF0 ■	ZCEH0 ▲	ZCEF2 ▲	ZCEH2 ▲	ZCE08	ZCE07	ZCE06
Price	\$36	\$36	\$36	\$36	\$17	\$17	\$17

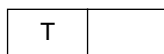
Metal Rotary Heads and Levers

Description	Rotary Head without Lever, Spring Return, for Actuation from RH or LH Side	Plastic Roller Lever, Track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Steel Roller Lever, Track: 24/31 mm (ZCMD) 29/36 mm (ZCD/P/T)	Plastic Roller Lever, Track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Steel Roller Lever, Track: 16/39 mm (ZCMD) 21/44 mm (ZCD/P/T)	Plastic, Roller Lever, Track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)
Catalog No.	ZCE01	ZCY15 ■	ZCY16 ■	ZCY25 ■	ZCY26 ■	ZCY18 ▲
Price	\$9	\$7	\$7	\$7	\$7	\$7

Description	Steel Roller Lever, for Track: 20/36 mm (ZCMD) 24/40 mm (ZCD/P/T)	Ceramic Roller Lever	Variable Length Plastic Roller Lever	Round, Glass Fiber Rod Lever Ø 3 mm L = 125 mm	Metal Spring Lever	Plastic Roller Lever Ø 50 mm	Adjustable Plastic Roller Lever Ø 50 mm
Catalog No.	ZCY19 ▲	ZCY22	ZCY45	ZCY55	ZCY91	ZCY39	ZCY49
Price	\$7	\$7	\$7	\$7	\$7	\$20	\$20

▲ Recommended for use with body ZCD.../ZCP.../ZCT...
 ■ Recommended for use with body: ZCMD...

For additional information, reference Catalog #9006CT0101.



Miniature Body/Contact Assemblies

Type of contact	2-pole N.C. + N.O. Snap action	3-pole N.C. + N.C. + N.O. Snap action	2-pole N.C. + N.O. Slow break	3-pole N.C. + N.C. + N.O. Slow break	2-pole N.C. + N.O. snap action 5 pin connector	1 single pole contact snap action 4-pin connector
Metal body	ZCMD21	ZCMD39	ZCMD25	ZCMD37	ZCMD21C12	ZCMD21M12
Price	\$41	\$53	\$43	\$55	\$62	\$62

Compact Body/Contact Assemblies

Type of contact	2-pole N.C. + N.O. Snap action	3-pole N.C. + N.C. + N.O. Snap action	2-pole N.C. + N.O. Slow break	3-pole N.C. + N.C. + N.O. Slow break	2-pole N.C. + N.O. Snap action	2-pole N.C. + N.O. Snap action	2-pole N.C. + N.O. Snap action	2-pole N.C. + N.O. Slow break
Metal body	ZCD21	ZCD39	ZCD25	ZCD37	ZCD21M12	...	...	...
Price	\$27	\$38	\$31.05	\$43.50	\$60.75	...	...	...
Plastic body	ZCP21	ZCP39	ZCP25	ZCP37	...	ZCP21M12	ZCT21P16	ZCT25P16
Price	\$20	\$28	\$23	\$32	...	\$35	\$22	\$25

Connection of Miniature Body/Contact Assemblies

Specific pre-cabled connection components		Price		Price		Price		Price
Length = 1 m	ZCMC21L1	\$14	ZCMC39L1	\$14	ZCMC25L1	\$14	ZCMC37L1	\$14
Length = 2 m	ZCMC21L2	18	ZCMC39L2	18	ZCMC25L2	18	ZCMC37L2	18
Length = 5 m	ZCMC21L5	31	ZCMC39L5	31	ZCMC25L5	31	ZCMC37L5	31

Connection of Compact Body/Contact Assemblies

Description	Outlet for ISO M16 gland	Price	Outlet for ISO M20 gland	Price	Outlet for Pg 11 gland	Price	Outlet for Pg 13.5 gland	Price	Outlet for 1/2" gland	Price	Outlet for PF 1/2 gland	Price
Interchangeable cable gland												
Metal	ZCPEP16	\$2.00	ZCPEP20	\$2.00	ZCPEG11	\$2.00	ZCPEG13	\$2.00	ZCPEN12	\$2.00	ZCPEF12	\$2.00
Plastic	ZCDEP16	2.70	ZCDEP20	2.70	ZCDEG11	2.70	ZCDEG13	2.70	ZCDEN12	2.70	ZCDEF12	2.70

For additional information, reference Catalog #9006CT0101.



Related Power
Conforms to IEC 947-5-1 duty
categories
AC15 and DC 13

XCKL

XCKL is a compact general duty limit switch for applications such as machine tools, material handling, etc

General Specification

Temperature range		-13° F to +158° F (-25° C to +70° C) The minimum temperatures listed are based on the absence of freezing moisture or water.
Enclosure rating	NEMA	1, 2, 3, 4, 12
	CENELEC Type	IP66
Vibration resistance		25 G (10–500 Hz), conforming to IEC 68-2-6
Shock resistance		50 G, conforming to IEC 68-2-27
Repeatability		0.002" (0.05 mm)
Cable entry		1/2" NPT standard

Contact Characteristics

Rated thermal current	10 A
Rated insulation voltage	300 Vac and dc (A300 and Q300)
Contact resistance (max.)	25 mΩ
Cable (max.)	2 x #16 AWG (1.5 mm ²) per terminal
Short circuit protection	10 A fuse type SC. Outside U.S. use gl or N.



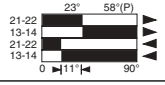
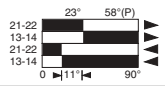
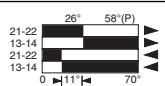
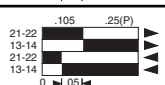
XCKL10011



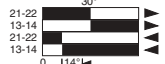
XCKL115

Complete Switches ▲

Lever Operated

Description ■	Functional Diagram	Operating Torque/Force	Contact Configuration	Catalog Number	Price
Programmable head CW and/or CCW—snap action DELRIN roller lever—adjustable in 5° or 45° in increments (reversible mounting).		14.2 in-oz	SPDT (N.O. + N.C.) snap	XCKL10011	\$73.00
		14.2 in-oz	SPDT (N.O. + N.C.) slow	XCKL50011	73.00
Adjustable length roller lever—adjustable in 5° or 45° increments (reversible mounting).		14.2 in-oz	SPDT (N.O. + N.C.) snap	XCKL10041	73.00
		14.2 in-oz	SPDT (N.O. + N.C.) slow	XCKL50041	73.00
CW and CCW, DELRIN roller lever		21.3 in-oz	SPDT (N.O. + N.C.) snap	XCKL115	43.70
		21.3 in-oz	SPDT (N.O. + N.C.) slow	XCKL515	43.70
One way lever-DELRIN roller		25.3 in-oz	SPDT (N.O. + N.C.) snap	XCKL121	60.00
		25.3 in-oz	SPDT (N.O. + N.C.) slow	XCKL521	60.00

Omnidirectional

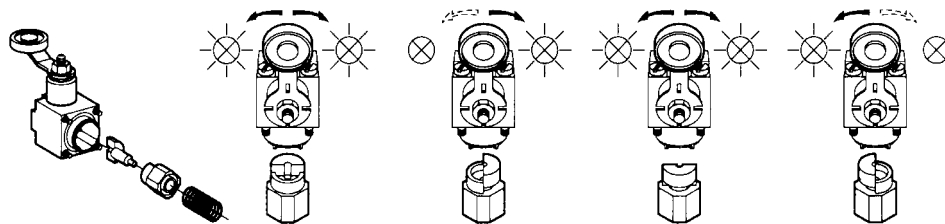
Wobble stick-steel rod		1.84 in-oz	SPDT (N.O. + N.C.) snap	XCKL106	50.00
		1.84 in-oz	SPDT (N.O. + N.C.) slow	XCKL506	50.00

▲ Complete switches may be ordered assembled. Consult your Square D/Telemecanique representative.

■ Diagrams shown are for XCKL1●●●.
Lever arms 19-21

ZCKG00 Programming

The ZCKG00 head is field convertible to CW, CCW, or CW/CCW.



File E39281
CCN NKCR

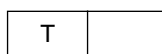


File LR44087
Class 3211-03



Acceptable Wire
Sizes 14–24 AWG
Recommended Terminal
Clamp Torque 13 in-lb

For additional information, reference Catalog #9006CT0101.



Discount
Schedule

Complete Switches

Plunger Operated



XCKL110

XCKL102



ZCKL1/L5



ZCKG00



ZCKD15,16,17



ZCKD10



ZCKD02



ZCKD21,23



ZCKY11



ZCKY43



ZCKY51



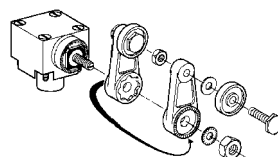
ZCKY71



ZCKY81



ZCKY91



Reverse Lever Mounting
ZCKG00

Description ■	Functional Diagram	Operating Torque/Force	Contact Configuration	Catalog Number	Price
Rod plunger		35.6 oz	SPDT (N.O. + N.C.) snap	XCKL110	\$40.40
		35.6 oz	SPDT (N.O. + N.C.) slow	XCKL510	40.40
Roller plunger		35.6 oz	SPDT (N.O. + N.C.) snap	XCKL102	60.00
		35.6 oz	SPDT (N.O. + N.C.) slow	XCKL502	60.00

▲ Complete switches may be ordered assembled. Consult your Square D/Telemecanique representative.
■ Diagrams shown are for XCKL1●●●.



File 42259
CCN NKCR



File LR25490
Class 3211 03



Acceptable Wire Sizes 14–24 AWG
Recommended Terminal
Clamp Torque 13 in-lb

Bodies—Electric

Components	Contacts	Catalog Number	Price
Body 1 N.O. + 1 N.C. Single pole, double break 1 N.O./N.C. Snap action, positive opening, same polarity	Silver	ZCKL1	\$32.80
	Gold Flashed	ZCKL18	56.00
Body 1 N.O. + 1 N.C., single pole double break Slow make, slow break isolated	Silver	ZCKL5	32.80

Omnidirectional Heads

Description	Catalog Number	Price
Cat whisker—steel rod ▼	ZCKD06	\$17.50
Wobble spring—steel spring ▼	ZCKD08	17.50

▼ Replacement cat whiskers and wobble extensions are not available separately. Order complete head as a replacement.

Replacement Parts

Description	Catalog Number	Price
Contact block for ZCKL1	XESP2151	\$24.00
Contact block for ZCKL5	XENP2151	27.30
Gold flashed contact block for ZCKL18	XESP2158	24.00

Rotary Heads

Components	Contacts	Catalog Number	Price
Programmable head★ CW and/or CCW	Select lever arm separately	ZCKG00	\$32.80
Offset DELRIN roller lever ♦		ZCKD15	11.00
Offset steel roller lever ♦		ZCKD16	11.00
Offset ball bearing roller lever ♦		ZCKD17	24.00

♦ Replacement arms are not available separately. Order complete head as a replacement.
★ See page 19-20.

Plunger Heads

Description	Catalog Number	Price
Rod plunger	ZCKD10	\$ 7.70
Booted rod plunger	ZCKD109	14.20
Roller plunger	ZCKD02	27.30
Booted roller plunger	ZCKD029	33.80
One-way lever—DELRIN roller	ZCKD21	27.30
Steel roller	ZCKD23	27.30

Levers (For use with ZCKG00 heads only. These arms will not fit ZCKD___ heads.)

Description	Size	Adjustment □ Increments	Catalog Number	Price
DELRIN roller	0.9" diameter, 0.2" wide, 1.6" long	5° or 45°	ZCKY11	\$ 7.70
Steel roller	0.9" diameter, 0.2" wide, 1.6" long	5° or 45°	ZCKY13	7.70
Ball bearing roller	0.9" diameter, 0.2" wide, 1.6" long	5° or 45°	ZCKY14	20.70
Adjustable length DELRIN roller	0.74" diameter, 0.2" wide, 4.2" long (max.)	5° or 90°	ZCKY41	7.70
Steel roller	0.74" diameter, 0.2" wide, 4.2" long (max.)	5° or 90°	ZCKY43	7.70
Steel rod, square	1/8" side, 5.4" long (max.)	5° or 45°	ZCKY51	7.70
Fiberglass rod, round	1/8" diameter, 5.4" long (max.)	5° or 45°	ZCKY52	7.70
Steel rod, round	1/8" diameter, 5.4" long (max.)	5° or 45°	ZCKY53	7.70
Plastic rod, round	1/4" diameter, 8.4" long (max.)	5° or 45°	ZCKY59	7.70
Fork, 2 track DELRIN roller	0.9" diameter, 0.2" wide for ZCKE092	5° or 45°	ZCKY71	14.20
Coil spring lever △		5° or 45°	ZCKY81	7.70
Spring rod lever △		5° or 45°	ZCKY91	7.70

△ Flexible operators will not guarantee positive opening operation.
□ Reverse mounting (for ZCKG00 head)—The higher increment (45° or 90°) is a positive opening contact feature which ensures no loss of mechanical effort between the actuation point and the moving contact bridge of the N.C. contact even if the lever is loosely mounted on the head shaft.

For additional information, reference Catalog #9006CT0101.

Limit Switches

XCKML—General Specifications and Complete Devices



2 N.O. and 2 N.C. Direct Opening Snap Action Contacts
Rated Power
Conforms to IEC 947-5-1
Duty Categories AC15 and DC13.

XCKML is a general duty limit switch, larger than the XCKL, for applications such as machine tools, material handling, and other applications where electrical redundancy and contact state signaling are required. Key features include:

- 2 normally closed direct opening and two normally open snap action contacts available in 4 head styles
- Direct opening contacts standard: snap action 2-pole (isolated N.O. + N.C.) or slow-make-slow-break 2-pole (isolated N.O. + N.C.)
- 4 position indexing rotary head (field convertible)
- Captive screws and gaskets
- Captive saddle clamp terminals
- Feature FINGERSAFE® contact block
- Lever operated—positive lever to shaft positioning to ensure the direct opening feature. Direct opening contacts meet IEC 947-5-1 requirements for positive opening contacts.
- Plunger operated: top rod, top roller
- Metal type, IP66
- Complete switches with 3 cable entries
- Tapped for 13 mm cable gland, DE9RA1212 adapter to 1/2" NPT included

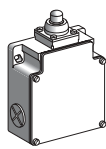
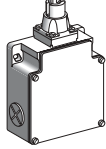
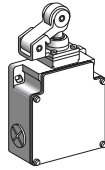
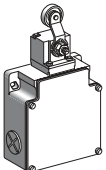
UL Listed CSA Certified, IEC, VDE, CENELEC and other international approvals, CE

Characteristics

Conforming to standards	Products	IEC 947-5-1, EN 60 947-5-1			
	Machine assemblies	IEC 204-1, EN 60 204-1, NF C 79-130			
Protective treatment		Standard version: "TC"			
Ambient air temperature		Operation: -25 to +70° C			
Resistance	to vibration	25 gn (10 to 500 Hz) conforming to IEC 68-2-6			
	to shocks	50 gn conforming to IEC 68-2-27			
Electric shock protection		Class I conforming to IEC 536 and NF C 20-030			
Degree of protection		IP66 conforming to IEC 529; IP65 conforming to NF C 20-010			
Minimum force of torque	for tripping	15 N	12 N	8 N	0.2 N.m
	for positive opening	60 N	50 N	50 N	0.5 N.m
Maximum actuation speed		0.5 m/s	0.5 m/s	1.5 m/s	1.5 m/s
Switch actuation		On end	By 30° cam		
Repeat accuracy		± 0.1 mm on the tripping points			
Rated operational characteristics		~ AC-15; A300 or Ue = 240 V, Ie = 3 A (for make and break ratings see XCKL page 19-20) DC-13; Q300 or Ue = 250 V, Ie = 0.27 A conforming to IEC 947-5-1 Appendix A, EN 60 947-5-1			
Rated insulation voltage		Ui = 500 V degree of pollution 3 conforming to IEC 947-1			
Rated impulse withstand voltage		U imp = 6 kV conforming to IEC 947-1, IEC 664			
Positive operation		N.C. contacts with direct opening operation conforming to IEC 947-5-1 Appendix K, EN 60 947-5-1			
Short-circuit protection		10 A cartridge fuse gG (gl)			
Cable entry		3 tapped entries for 13 mm cable glands conforming to NFC 68-300 (DIN Pg 13.5). Clamping capacity 9 to 12 mm.			
Cabling		Screw and captive cable clamp terminals. Clamp capacity: minimum 1 x 0.34 mm ² , maximum: 2 x 1.5 mm ² or 1 x 2.5 mm ² depending on contact. Tightening torque: minimum 0.8 Nm, maximum 1.2 Nm			

Note: Heads use the same lever as those used on the XCKL line. For direct opening operation use rigid operators. For characteristics of XESP*** and XENP*** contact blocks, please refer to our Limit Switch catalog 9007CT9701. (Only the heads shown below are UL Listed.)

Selection Table

Type of Operating Head	Plunger			Rotary
Type of operator	 Metal end plunger	 Steel roller plunger	 Thermoplastic roller lever plunger. Horizontal actuation in 1 direction	 Thermoplastic roller lever ▲
References (⊖ N.C. contact with direct opening operation)				
Two contact blocks, 2-pole 1 N.C. + 1 N.O. snap action 3 entries 13 mm	⊖ XCKML110 \$88.	⊖ XCKML102 \$108.	⊖ XCKML121 \$108.	⊖ XCKML115 \$91.
Two contact blocks, 2-pole 1 N.C. + 1 N.O. break before make, slow break 3 entries 13 mm	⊖ XCKML510 \$88.	⊖ XCKML502 \$108.	⊖ XCKML521 \$108.	⊖ XCKML515 \$91.
Weight (kg)	0.400	0.405	0.450	0.430

- ▲ Adjustable throughout 360° in 5° steps, or in 90° steps by reversing the notched washer.
- Do not replace head. Order complete unit.

For additional information, reference Catalog #9006CT0101.

Setting-up

Type of actuation

XCKML•10



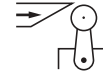
XCKML•02



XCKML•21, XCKML•21H29

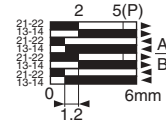


XCKML•15, XCKML•15H29

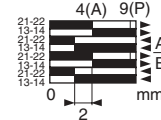


Function diagrams

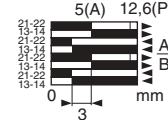
XCKML110



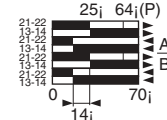
XCKML102



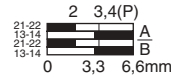
XCKML121, XCKML 121H29



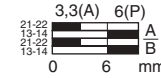
XCKML115, XCKML115H29



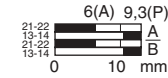
XCKML510



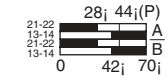
XCKML502



XCKML521



XCKML515



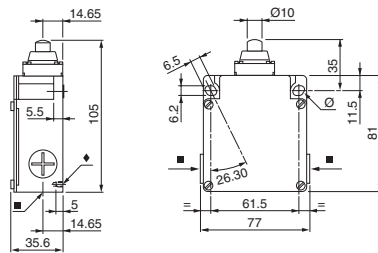
Contact operation
 contact closed
 contact open

(A) = cam displacement

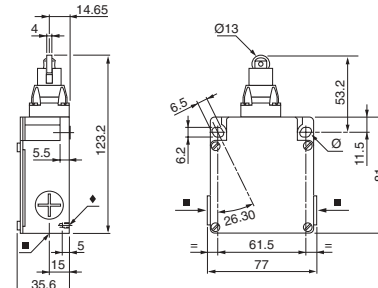
(P) = Direct opening point

Dimensions (mm)

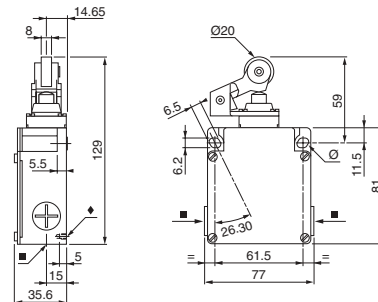
XCKML110, XCKML510



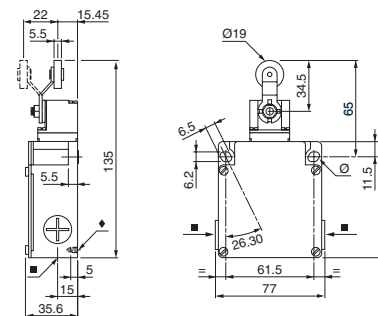
XCKML102, XCKML502



XCKML121, XCKML521



XCKML115, XCKML515



ZCKML1/ML5

- 3 cable entries, tapped for 13 mm cable gland 1/2" NPT adapter DE9RA1212 supplied.
- ◆ 2 centering holes $\varnothing 3.9 \pm 0.2$, for cover screws.
- (\varnothing) 2 elongated holes 6.2 x 6.5, inclined at 26 to 30° to the horizontal axis, for M5 screws

For additional information, reference Catalog #9006CT0101.

The XCM is a prewired miniature switch designed to meet international standards and requirements. Mounting for the switch meets European requirements. (The switch body has 30 mm mounting hole centers.)

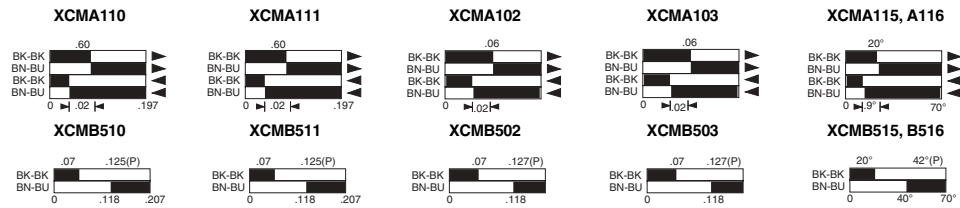
- XCMA is available in standard snap action contacts.
- XCMB has slow-break before make direct opening contacts that meet IEC 947-5-1 requirements for positive opening contacts.



XCMA110

Conforming to Standards	Products	IEC 947-5-1, IEC 337-1, EN 60 947-5-1, NFC 63-140, NFC 63-145 class Y2, VDE 0660-200, UL 508, CSA C22-2 n°14
	Installation	IEC 204-1, EN 60 204-1, NFC 79-130
Approvals		All models DEMKO 6 A-380 V. XCM-B: FI 6 A-400 V. XCMA and XCMB: UL Recognized (File E39281, CNN NKCR2), CSA (File LR44087, Class 321103)
Protective treatment		Standard version: "TH"
Ambient temperature		-13° F to 158° F (-25° C to 70° C) The minimum temperatures listed are based on the absence of freezing moisture or water.
Vibration resistance		XCMA: 5 g. XCMB: 25 g (10 to 500 Hz) conforming to IEC 68-2-6
Shock resistance		25g conforming to IEC 68-2-27
Electric shock protection		Class I conforming to IEC 536 and NFC 20-030
Degree of protection		IP67 conforming to IEC 529; IP675 conforming to NFC 20-010
Repeat accuracy		0.004" (0.01 mm) on the tripping points.
Rated operational characteristics		~ AC-15; A 300 or Ue = 240V, Ie = 3A ~ DC-13; Q300 or Ue = 250V, Ie = 0.27 A conforming to IEC 947-5-1 Appendix A, EN 60 947-5-1
Rated insulation voltage		Ui = XCM-A: 500V. XCM-B: 400V degree of pollution 3 to IEC 947-5-1, group C to NFC 20-040 and VDE 0110. Ui = 300V conforming to UL 508, CSA C22-2 n°14.
Rated impulse withstand voltage		U imp = 4 kV conforming to IEC 947-1, IEC 664
Resistance across terminals		≤25 mΩ conforming to NFC 93-050 method A or IEC 255-7 category 3
Short-circuit protection		6 A cartridge fuse type gG (gl) conforming to IEC 947-5-1, VDE 0660-200
Cabling		Pre-cabled, 5 x 0.75 mm ² (21 AWG), length 1 meter (pre-cabled in other lengths)

Contact Function Diagrams



Contact operation (A) = cam displacement
 ■ contact closed (P) = positive opening point
 □ contact open

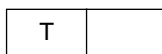
Selection Table

Type of Operating Head		Plunger Type				Lever Type	
Type of Operator		Steel end plunger	Steel end plunger with rubber boot	Steel roller plunger for lateral cam approach	Steel roller plunger for traverse cam approach	Roller lever thermoplastic	Roller lever steel
1 N.C. + N.O. snap action		XCMA110 \$91.	XCMA111 \$96.	XCMA102 \$99.	XCMA103 \$99.	XCMA115 \$131.	XCMA116 \$131.
1 N.C. + N.O. break before make, slow break		XCMB510 \$96.	XCMB511 \$101.	XCMB502 \$105.	XCMB503 \$105.	XCMB515 \$137.	XCMB516 \$137.
Minimum Force	For tripping	27 oz	27 oz	14.4 oz	14.4 oz	10.4 in-oz	10.4 in-oz
	For positive opening	63 oz	63 oz	50.4 oz	50.4 oz	20.8 in-oz	20.8 in-oz
Maximum actuation speed		19.6 in/sec	19.6 in/sec	3.9 in/sec	3.9 in/sec	59 in/sec	59 in/sec
Switch actuation		On end	On end	By 30° cam	By 30° cam	By 30° cam	By 30° cam

Additional operator styles available. Consult your local field office for further information.
 All devices are supplied with 1 meter of cable as standard. For other cable lengths, insert the cable length, in meters, at the end of the type number (ie: for two meters of cable XCMA110 becomes XCMA1102). Add \$6.30 per additional meter.



For additional information, reference Catalog #9006CT0101.



Discount Schedule

The heavy duty completely encapsulated miniature MS limit switch is intended for difficult applications such as machine tools, earth moving equipment, general transportation, etc. (The switch has 40 mm mtg hole centers.)



General Specifications

Temperature range	-40° F to +221° F (-40° C to +105° C) The minimum temperatures listed are based on the absence of freezing moisture or water.
Enclosure rating	NEMA 1, 2, 4, 6, 6P, 12, 13, IP67
Vibration resistance	10 G (75–1200 Hz)
Shock resistance	35 G

Contact Characteristics

Rated thermal current	10 A (standard)
Rated insulation voltage	300 Vac and dc (standard)
Gold contact switching ratings	0.1A, 24 Vdc; 0.24 VA
Cable	#18 AWG SJTO

MS Circuit - Form C	Electrical Ratings/SPDT Form C (MS Type)			Gold Contacts
	Silver Contacts			
1 N.O.–1 N.C.	Volts	Make	Break	100 mA @ 125 Vac 30 mA 28 VDC
	120 ac	60 A	6 A	
	240 ac	30 A	3 A	
10.0 Amperes Continuous			DC Contact Rating: 5 A (Res), 28 Vdc	

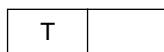
ML Circuit - Form Z	Electrical Ratings/SPDT-DB Form Z (ML Type)		
	Silver Contacts		
1 N.O.–1 N.C.	Volts	Make	Break
	120 ac	60 A	6 A
	240 ac	30 A	3 A
10.0 Amperes, Continuous			DC Contact Rating: 5 A (Res), 28 Vdc

Description / Functional Diagram	MS	ML	Operating Force/Torque	Contact Form	Contact Type	Catalog Number ▲	List Price
Top plunger			80 oz	SPDT Form C	Silver	MS01S0100	\$ 59.
			80 oz	SPDT Form C	Gold	MS01G0100	65.
			80 oz	SPDT Form Z	Silver	ML01S0100	82.
Parallel roller plunger			80 oz	SPDT Form C	Silver	MS02S0100	68.
			80 oz	SPDT Form C	Gold	MS02G0100	76.
			80 oz	SPDT Form Z	Silver	ML02S0100	91.
Cross roller plunger			80 oz	SPDT Form C	Silver	MS03S0100	68.
			80 oz	SPDT Form C	Gold	MS03G0100	76.
			80 oz	SPDT Form Z	Silver	ML03S0100	91.
Rotary lever, CW and CCW			48 in-oz	SPDT Form C	Silver	MS04S0100	86.
			48 in-oz	SPDT Form C	Gold	MS04G0100	93.
			48 in-oz	SPDT Form Z	Silver	ML04S0100	110.
Omnidirectional—wire whisker (NEMA 1, 2, 12, 13 only)			15 in-oz	SPDT Form C	Silver	MS05S0100	86.
			15 in-oz	SPDT Form C	Gold	MS05G0100	93.
Bushing mounted—top plunger			80 oz	SPDT Form C	Silver	MS06S0100	83.
			80 oz	SPDT Form C	Gold	MS06G0100	90.
			80 oz	SPDT Form Z	Silver	ML06S0100	106.
Bushing mounted—parallel roller plunger			80 oz	SPDT Form C	Silver	MS07S0100	93.
			80 oz	SPDT Form C	Gold	MS07G0100	99.
			80 oz	SPDT Form Z	Silver	ML07S0100	116.
Bushing mounted—cross roller plunger			80 oz	SPDT Form C	Silver	MS08S0100	93.
			80 oz	SPDT Form C	Gold	MS08G0100	99.
			80 oz	SPDT Form Z	Silver	ML08S0100	116.
Adjustable top plunger			80 oz	SPDT Form C	Silver	MS09S0100	83.
			80 oz	SPDT Form C	Gold	MS09G0100	90.
			80 oz	SPDT Form Z	Silver	ML09S0100	106.

▲ See available options on page 19-26. Add to the end of catalog number. Up to three options may be added, if applicable.

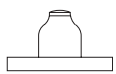
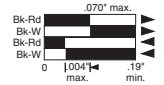
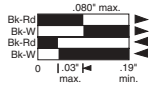

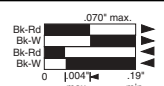
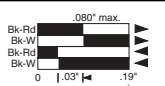
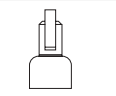
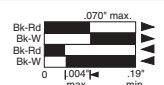
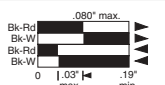


For additional information, reference Catalog #9006CT0101.



Lever Arms

Type MS/ML Miniature—Class 9007

Description / Functional Diagram	MS	ML	Operating Force/Torque	Contact Form	Contact Type	Catalog Number	List Price
			80 oz	SPDT Form C	Silver	MS10S0100	\$65.00
			80 oz	SPDT Form C	Gold	MS10G0100	76.00
			80 oz	SPDT Form Z	Silver	ML10S0100	87.00
			80 oz	SPDT Form C	Silver	MS12S0100	76.00
			80 oz	SPDT Form C	Gold	MS12G0100	82.00
			80 oz	SPDT Form Z	Silver	ML12S0100	97.00
			80 oz	SPDT Form C	Silver	MS13S0100	76.00
			80 oz	SPDT Form C	Gold	MS13G0100	82.00
			80 oz	SPDT Form Z	Silver	ML13S0100	97.00

▲ See available options below. Add to the end of catalog number. Up to three options may be added, if applicable.
 ■ See below for conductor length selection.

For Conductor Length and General Options Selection: 9007MS01S A _ B _

A _ Conductor Length ▲

	Designator	Price Adder
No cable ♦	00	NC
3 feet—standard	01	NC
6 feet	02	\$ 4.30
9 feet	03	9.80
12 feet	04	14.20
18 feet	05	24.00
33 feet	13	65.00

♦ Use with options 54, 55, 82

B _ General Options ††

Do not apply to ML except where noted.

	Designator	Price
#16 AWG SJTO cable	02	\$ 4.30
Side entrance #18 AWG SJTO cable	06	7.70
Gray #18 AWG SJTO cable	10	NC
#18 AWG individual conductors	11	NC
Male 4 pin mini connector with 3 ft. cable	12	41.50
Low force (NEMA 1 only) 18 oz.	21	3.30
High Pre-travel—adds 0.030	30	13.50
Male 4 pin micro connector in housing (DC type)	54	37.20
Male 5 pin micro connector (MS and ML, DC type)	55	37.20
Tapped holes in top of plunger housing (MS and ML)	81	N/C
Male 4 pin micro connector in housing (AC type)	82	37.20
Black #18 AWG SJTO cable	83	NC



Shown with side entrance cable, option 06

There are over 100 styles of levers to accommodate most of the industrial applications. They are made of zinc diecast. The roller levers are available with nylon rollers as standard and are also available with steel rollers or ball bearing roller (selected models only). Corrosion resistant models are also available.

Style 7 Levers—.75" (19 mm) diameter, nylon or steel roller (9007 prefix is not required on levers catalog numbers)

Length	Catalog Number 1/4" (6 mm) Wide	Catalog Number 1/2" (13 mm) Wide		Catalog Number 3/4" (19 mm) Wide		Catalog Number 1" (25 mm) Wide		List Price
		Nylon	Steel	Nylon	Steel	Nylon	Nylon	
0.875 (22.23)	7A2N 7A2	7B2N 7B2	7F2N 7F2	7J2N 7J2				\$ 9.80
1.375 (34.93)	7A3N ...	7B3N ...	7F3N ...	7J3N ...				9.80
1.5 (38.10)	7A1N 7A1	7B1N ...	7F1N ...	7J1N ...				9.80
1.75 (44.45)	7A7N ...	7B7N ...	7F7N ...	7J7N ...				9.80
2.00 (50.8)	7A4N ...	7B4N ...	7F4N ...	7J4N ...				16.40
0.875 (22.23)	7XA2N 7XA2	7XB2N 7XB2	7XF2N 7XF2	7XJ2N 7XJ2				9.80
1.375 (34.93)	7XA3N ...	7XB3N ...	7XF3N ...	7XJ3N ...				9.80
1.5 (38.10)	7XA1N 7XA1	7XB1N ...	7XF1N ...	7XJ1N ...				9.80
1.75 (44.45)	7XA7N ...	7XB7N ...	7XF7N ...	7XJ7N ...				9.80
2.00 (50.8)	7XA4N ...	7XB4N ...	7XF4N ...	7XJ4N ...				16.40

Specialty Arms and Options (9007 prefix is not required on levers catalog numbers)

Description	Catalog Number	Price Adder
Style 7D adjustable length 1 ³ / ₈ " to 3 ³ / ₈ "—.75" diameter, 1/4" wide, metal roller	7D	\$16.40
Style 7DN adjustable length 1 ³ / ₈ " to 3 ³ / ₈ "—.75" diameter, 1/4" wide, nylon roller	7DN	16.40
Style 7S spring nylon, 6" rod, 0.3" diameter	7S	16.40
Style 7N nylon rod, 5" long, 0.3" diameter	7N	16.40
Corrosion resistant (option available with nylon rollers only)	S ★	3.30

★ Add S to end of catalog number.

Lever Tightening torque: for mounting lever on the shaft: minimum 17 in lb.

For additional information, reference Catalog #9006CT9701.

Double isolated (no grounding required) miniature limit switches are intended for medium duty applications such as packaging machinery, light material handling, printing presses, medical equipment, etc.



XCKP

General Specifications

Temperature range	-13° F to +158° F (-25° C to +70° C) The minimum temperatures listed are based on the absence of freezing moisture or water.	
Enclosure rating	NEMA	4, 12 Indoor use only
	CENELEC Type	IP65
Vibration resistance	25 G (10–500 Hz), conforming to IEC 68-2-6	
Shock resistance	50 G, conforming to IEC 68-2-27	
Repeatability	0.004" (0.1 mm)	
Cable entry	XCKP: ½" NPT molded conduit integral to the body	
	XCPT: CM10 with ½" NPT adapter (Part# DE9RA1012) included	

Contact Characteristics

Rated thermal current	10 A
Rated insulation voltage	300 Vac and dc (A300 and Q300)
Contact resistance (max.)	25 mΩ
Cable (max.)	2 x #16 AWG (1.5 mm ²) per terminal
Short circuit protection	10A fuse type SC. Outside U.S. use type gl or N.
Rated power	Conforms to IEC 947-5-1, duty categories AC15 and DC13.

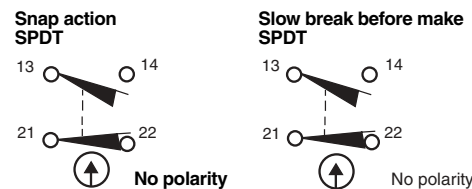
Electrical Ratings: A300 (A.C.) Q300 (D.C.)

Contact Rating Designation	Thermal continuous test current: A300(AC)—10 A; Q300(DC)—2.5 A												Maximum volt amp	
	120 V		125 V		240 V		250 V		480 V		– 600 V			
	M	B	M	B	M	B	M	B	M	B	M	B	M	B
A300 (AC)	60	6.00	...	...	30	3.00	...	...	...	...	...	...	7200	720
Q300 (DC)	...	...	0.55	0.55	...	...	0.27	0.27	...	...	...	...	...	...



XCKT

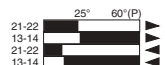
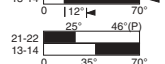
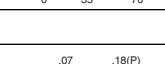


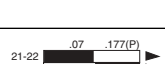

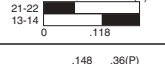

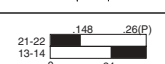
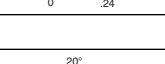
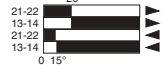
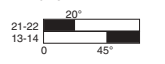

Wiring Diagrams



Note: Information on the XCK P/T Safety Interlock can be found in "Machine Safeguarding Products," page 23-13.

For additional information, reference Catalog #9006CT0101.

XCKP Compact—Selection Information

Description	Operating Characteristics	Operating torque/ Force	Contact Type	Catalog Number	Price
Lever Operated—CW and CCW (5° and 90° adjustment increments)					
DELTRIN roller lever		14.2 in-oz	SPDT (N.O. + N.C.) snap	XCKP118	\$37.20
Adjustable length— DELTRIN roller lever		14.2 in-oz	SPDT (N.O. + N.C.) snap	XCKP145	39.30
DELTRIN roller lever		14.2 in-oz	SPDT (N.O. + N.C.) slow	XCKP518	40.40
Rod Plunger					
Steel plunger		35 oz	SPDT (N.O. + N.C.) snap	XCKP110	33.80
Booted steel plunger		35 oz	SPDT (N.O. + N.C.) snap	XCKP111	40.40
Steel plunger		35 oz	SPDT (N.O. + N.C.) slow	XCKP510	37.20
Roller Plunger					
DELTRIN roller plunger		35 oz	SPDT (N.O. + N.C.) snap	XCKP102	47.00
		35 oz	SPDT (N.O. + N.C.) slow	XCKP502	50.00
One way horizontal		17oz	SPDT (N.O. + N.C.) snap	XCKP121	50.00
		17 oz	SPDT (N.O. + N.C.) slow	XCKP521	54.00
One way vertical		17 oz	SPDT (N.O. + N.C.) snap	XCKP127	50.00
		17 oz	SPDT (N.O. + N.C.) slow	XCKP527	54.00
Omnidirectional■					
Cat whisker		18.5 in-oz	SPDT (N.O. + N.C.) snap	XCKP106	43.70
		18.5 in-oz	SPDT (N.O. + N.C.) slow	XCKP506	49.20



XCKP102

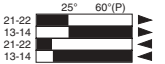
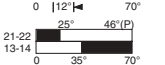
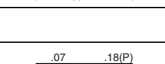
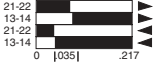
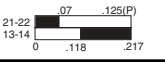
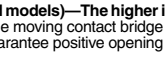


XCKP121



XCKP127

XCKT Compact—Selection Information

Description	Operating Characteristics	Operating Torque/ Force	Contact Type	Catalog Number	Price
Lever Operated—CW and CCW (5° to 90° adjustment increments)▲					
DELTRIN roller lever		14.2 in-oz	SPDT (N.O. + N.C.) snap	XCKT118	\$40.40
Adjustable length— DELTRIN roller lever		14.2 in-oz	SPDT (N.O. + N.C.) snap	XCKT145	42.50
DELTRIN roller lever		14.2 in-oz	SPDT (N.O. + N.C.) slow	XCKT518	43.70
Rod Plunger					
Steel plunger		35 oz	SPDT (N.O. + N.C.) snap	XCKT110	37.20
Booted steel plunger		35 oz	SPDT (N.O. + N.C.) snap	XCKT111	43.70
Steel plunger		35 oz	SPDT (N.O. + N.C.) slow	XCKT510	40.40

▲ Reverse mounting (for lever operated models)—The higher increment (90°) is a positive opening contact feature which ensures no loss of mechanical effort between the actuator point and the moving contact bridge for the N.C. contact even if the lever is loosely mounted on the shaft.
■ Caution: Flexible operators will not guarantee positive opening action.



XCKT118



XCKT110



File E39281
CCN NKCR

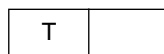


File LR44087
Class 3211 03



Acceptable Wire Sizes 14–24 AWG
Recommended Terminal
Clamp Torque 13 in-lb

For additional information, reference Catalog #9006CT0101.



Discount
Schedule

XCKT Compact
XCKT—Selection Information



XCKT121

Description	Operating Characteristics	Operating Torque/Force	Contact Type	Catalog Number	Price
Roller Plunger					
DELTRIN roller plunger		35 oz	SPDT (N.O. + N.C.) snap	XCKT102	\$50.00
		35 oz	SPDT (N.O. + N.C.) slow	XCKT502	54.00
One way-horizontal		17 oz	SPDT (N.O. + N.C.) snap	XCKT121	54.00
		17 oz	SPDT (N.O. + N.C.) slow	XCKT521	57.00
Omnidirectional					
Cat whisker		18.5 in-oz	SPDT (N.O. + N.C.) snap	XCKT106	47.00
		18.5 in-oz	SPDT (N.O. + N.C.) slow	XCKT506	50.00

Options

Description	Suffix	Price adder
Gold flashed contact for snap action switches	8	\$23.00

▲ Other contact configurations are available. Contact factory for details.
■ Caution: Flexible operators will not guarantee positive opening action.

XCKP/T Compact—Maintained with Manual Reset—Selection Information

These switches have been designed for applications requiring **operator intervention in order to restart the equipment**. The switches have a maintained tripped position and only operator intervention on the front button resets them in normal position. The contact is **slow break-before-make** SPDT (isolated N.O. + N.C.) **with direct opening action**. Direct opening contacts meet IEC 947-5-1 requirements for positive opening contacts.



XCKP5189



XCKT5189

Description	Operating Characteristics	Operating Torque/Force	Catalog Number	Price
Lever Operated—CW and CCW (5° and 90° adjustment increments)				
DELTRIN roller lever		14.2 in-oz	XCKP5189	\$80.00
DELTRIN roller lever		14.2 in-oz	XCKT5189	86.00
Rod Plunger				
Steel plunger		35 oz	XCKP5109	76.00
Steel plunger		35 oz	XCKT5109	82.00
Roller Plunger				
DELTRIN roller plunger		35 oz	XCKP5029	84.00
		35 oz	XCKT5029	91.00
One way—horizontal action		17 oz	XCKP5219	82.00
		17 oz	XCKT5219	87.00
One way—vertical action		17 oz	XCKP5279	83.00

The actuator should be moved beyond a certain point (P in the functional diagram) to positively latch.

19 LIMIT SWITCHES



File E39281
CCN NKCR



File LR44087
Class 3211 03



Acceptable Wire Sizes 14–24 AWG
Recommended Terminal
Clamp Torque 13 in-lb

For additional information, reference Catalog #9006CT0101.



Discount
Schedule



Type AB21



Type AO2

Industrial Snap Switches and Limit Switches Without Enclosures

Industrial snap switches have been incorporated in many Square D products such as timers, specialty push buttons, footswitches, operating mechanisms, door interlocks, motor control centers, limit switches, and many other control products.

Recommended Actuator—An adjustable actuator is recommended. If non-adjustable actuator is used, a resilient type or a mechanical stop should be used to prevent “bottoming” of button mechanism.

Adjustable Actuator Overtravel—Minimum recommended overtravel in both trip and reset directions is 0.015".

Adjustable Actuator Total Travel—Maximum differential limit plus 0.030" (Example: 0.076" for Type AO2).

Non-Adjustable Actuator Total Travel—Fully retracted—at least 0.139" for Type AO1 and 0.160" for Types AO2 and CO3 from mounting surface. Fully engaged—at least 0.061" but not closer than 0.045" from mounting surface.

Quick Make And Break—600 Volts Max. AC and DC

Type of Operator	Contact Arrangement▲	Type	Price	Type of Operator	Contact Arrangement▲	Type	Price	Type of Operator	Contact Arrangement▲	Type	Price
Basic Snap Switch	1 N.O. 1 N.C.	AO1	\$37.70	Rigid Roller Lever Type	2 N.O. 2 N.C.	CB31 (RH)◆	\$ 98.00	Roller Plunger Type Panel Mounting Non-Oiltight	1 N.O. 1 N.C.	AP321	\$ 80.00
	1 N.C.	AO1A	37.70			CB41 ◆ (w/o Side Mtg. bracket)	98.00		2 N.O. 2 N.C.	CP321	144.00
	1 N.O.	AO1B	37.70			CB33 (RH)★	98.00		CP324■	144.00	
	1 N.O. 1 N.C.	AO2	37.70			CB34 (LH)★	98.00		Operator Only	AP301▼	50.00
	1 N.C.	AO2A	37.70	Rigid Roller Lever Type One Way Roller	1 N.O. 1 N.C.	AB25 (RH)	60.00	AP304■▼	50.00		
	1 N.O.	AO2B	37.70		2 N.O. 2 N.C.	AB26 (LH)	60.00	AP323	86.00		
	2 N.O. 2 N.C.	CO3	75.00		CB35 (RH)	116.00	AP325■	86.00			
	2 N.O.	CO6 (Plug-in)	75.00	Cabinet Door Type	1 N.O. 1 N.C.	AC1	55.00	Roller Plunger Type Panel Mounting Oiltight	2 N.O. 2 N.C.	CP323	150.00
	Two Stage 2 N.O. 2 N.C.	CO7	90.00		2 N.O. 2 N.C.	CC1	110.00		CP325■	150.00	
Rigid Roller Lever Type	1 N.O. 1 N.C.	AB21 (RH) ◆	46.70	Plunger Type Panel Mounting	1 N.O. 1 N.C.	AP221	67.00	Operator Only	1 N.O. 1 N.C.	AP222	74.00
		AB22 (LH) ◆	46.70			2 N.O. 2 N.C.	CP221		123.00	2 N.O. 2 N.C.	CP222	135.00
		AB41 ◆ (w/o Side Mtg. Bracket)	46.70			Operator Only	AP201▼	37.70	Operator Only	AP202▼	40.10
		AB23 (RH) ★	46.70	Mushroom Button Type Panel Mounting	1 N.O. 1 N.C.	AP222	74.00				
		AB24 (LH) ★	46.70		2 N.O. 2 N.C.	CP222	135.00				

▲ Single pole snap switches that contain two double break contact elements (1 N.O. and 1 N.C.) must be used on circuits of same polarity. Two pole snap switches contain two electrically separated sets of contact elements allowing use on circuits of opposite polarity. Each set contains two double break contact elements (1 N.O. and 1 N.C.) that must be used on circuits of same polarity.
 ■ Roller turned 90° from standard (perpendicular to mounting holes).
 ◆ With 7/32" width roller.
 ★ With 15/32" width roller.
 ▼ For use with Type AO and CO basic switches.

19 LIMIT SWITCHES



Acceptable Wire Size 14–22 AWG
 Recommended Terminal Clamp Torque 6–9 in-lb

For additional information, reference Catalog #9006CT0101.