

Industrial Snap Switches Without Enclosures



Type AO2



Type AB21



Type AP222 with 2358C22G6 mushroom button

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

Recommended Actuator: An adjustable actuator is recommended. If nonadjustable 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 in.

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

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

Contact Configurations: Single-pole snap switches that contain two double-break contact elements (1 N.O. and 1 N.C.) must be used on circuits of the same polarity. Double-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 the same polarity.

Table 21.8: Quick Make and Break—600 Volts Max. AC and DC

Operator Style	Contact Arrangement	Type	Operator Style	Contact Arrangement	Type
Basic Snap Switch	1 N.O. 1 N.C.	AO1	Cabinet Door Style	1 N.O. 1 N.C.	AC1
	1 N.O.	AO1B		2 N.O. 2 N.C.	CC1
	1 N.O. 1 N.C.	AO2	Plunger Style Panel Mounting	1 N.O. 1 N.C.	AP221
	1 N.C.	AO2A		2 N.O. 2 N.C.	CP221
	1 N.O.	AO2B		Operator Only	AP201
	2 N.O. 2 N.C.	CO3		1 N.O. 1 N.C.	AP321 [1]
	2 N.O.	CO6 (Plug-in)	Roller Plunger Style Panel Mounting Non-Oiltight	2 N.O. 2 N.C.	CP321
	Two Stage 2 N.O. 2 N.C.	CO7		Operator Only	AP301 [1] AP304 [2]
Rigid Roller Lever Style	1 N.O. 1 N.C.	AB21 (RH) AB22 (LH) AB41 (without side mtg. bracket)	Roller Plunger Style Panel Mounting Oiltight	1 N.O. 1 N.C.	AP323
	1 N.O. 1 N.C.	AB23 (RH) AB24 (LH)		2 N.O. 2 N.C.	CP323
	2 N.O. 2 N.C.	CB31 (RH) CB41 (without side mtg. bracket)		Operator Only	AP303 [1] AP305 [1][2]
	2 N.O. 2 N.C.	CB33 (RH) CB34 (LH)		1 N.O. 1 N.C.	AP222
	15/32" width roller	AB21 (RH) AB22 (LH) AB41 (without side mtg. bracket)	Mushroom Button Style Panel Mounting		
	7/32" width roller	AB23 (RH) AB24 (LH)			
	7/32" width roller	CB31 (RH) CB41 (without side mtg. bracket)			
	15/32" width roller	CB33 (RH) CB34 (LH)			
Rigid Roller Lever Style One Way Roller	1 N.O. 1 N.C.	AB25 (RH)			

Table 21.9: Maximum Current Ratings For Control Contacts—All Types

Switch Type	Contacts [3]	AC—50 or 60 Hz						DC			AC or DC
		Voltage	Inductive 35% Power Factor				Resistive 75% Power Factor	Voltage	Inductive and Resistive		
			Make		Break		Make and Break Amperes		Make and Break Amperes		Continuous Carrying Amperes
			A	VA	A	VA			Single Pole	Double Pole	
AO1, AC	SPDT	120	40	4800	15	1800	15	125	0.5	0.25	15
	Form Z	240	20	4800	10	2400	10	250	0.25	0.1	15
	SPST	480	10	4800	6	2880	6	600	0.05	—	15
	Form X or Y	600	8	4800	5	3000	5	—	—	—	15
AW, AO2, and AO6, AB, AP	SPDT	120	40	4800	15	1800	15	125	2.0	0.5	15
	Form Z	240	20	4800	10	2400	10	250	0.5	0.2	15
	SPST	480	10	4800	6	2880	6	600	0.1	0.02	15
	Form X or Y	600	8	4800	5	3000	5	—	—	—	15
AW, CO3, and CO6, CB, CC, CP	DPDT	120	30	3600	3	360	3	125	1.0	0.2	10
	Form ZZ	240	15	3600	1.5	360	1.5	250	0.3	0.1	10
	DPST	480	7.5	3600	0.75	360	0.75	600	0.1	—	10
	Form AA or BB	600	6	3600	0.6	360	0.6	—	—	—	10

Acceptable Wire Size 14–22 AWG
Recommended Terminal Clamp Torque 6–9 lb-in (0.7–1.0 N·m)



File E78403
CCN NKCR2



File LR25490
Class 3211-03



[1] For use with Type AO and CO basic switches.
[2] Roller turned 90° from standard (perpendicular to mounting holes).
[3] Do not meet IEC 60947–5–1 requirements for direct opening contacts