

# NOMINAL RATINGS AND CIRCUIT DIAGRAMS

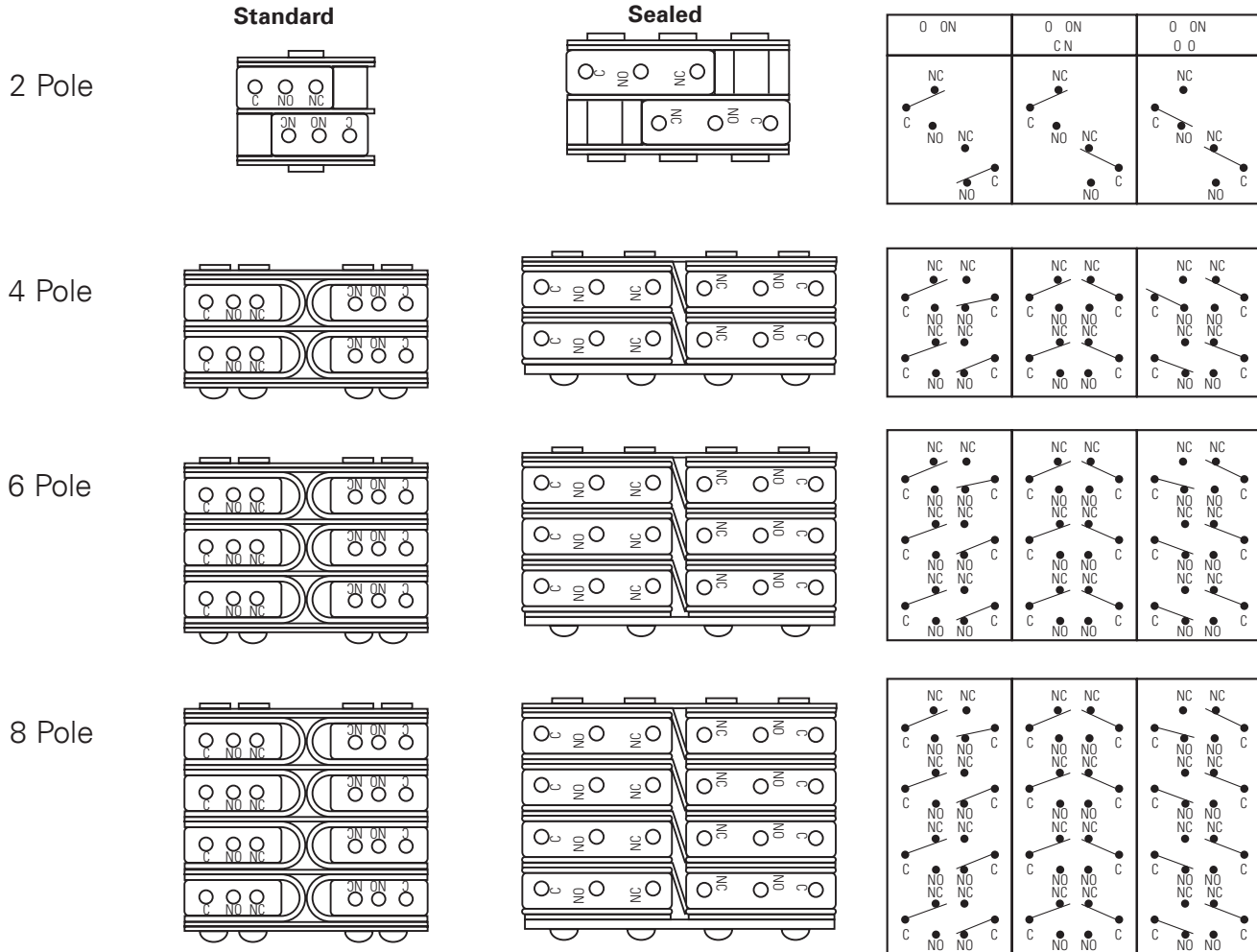
## UL AND CSA NOMINAL RATINGS

Catalog Number	Amperes		Maximum Horsepower		
			1 Phase		3 Phase
	125VAC	250VAC	125VAC	250VAC	125/250VAC
8520K1, K4, K9	18	9	1/4	1/2	-
8521K1, K4, K9	18	9	1/2	1	-
8522K1, K4, K9	18	9	1/2	1	1
8526K2, K3, K5	18	9	-	-	-
8527K2, K3, K5	18	9	-	-	-
8528K2, K3, K5	18	9	-	-	-
8530K1-13, K31-313, K91-913	18	9	1/4	1/2	-
8531K1-16, K31-316, K91-916	18	9	1/2	1	-
8532K1-17, K31-317, K91-917	18	9	1/2	1	1
8533K1-13, K31-313, K91-913	18	9	1/4	1/2	-
8534K1-13, K31-316, K91-916	18	9	1/2	1	-
8535K1-17, K31-317, K91-917	18	9	1/2	1	1
8536K1-13, K31-313, K91-913	18	9	1/4	1/2	-
8537K1-16, K31-316, K91-916	18	9	1/2	1	-
8538K1-17, K31-317, K91-917	18	9	1/2	1	1

## BASIC SWITCH CIRCUITS

## BACK CONFIGURATIONS

## SCHEMATIC DIAGRAMS



# TOGGLE SWITCHES - ENVIRONMENTALLY SEALED SWITCHES

## Standard Circuit Arrangements      Industrial, Econoswitch and MIL-DTL-3950 Series

CIRCUIT WITH LEVER IN . . .				
Number of Poles and Throws	Switch Circuit <sup>Ⓞ</sup>	Up Position 	Center Position 	Down Position (Keyway) 
1PST	ON-NONE-OFF		NONE	OFF
	ON-OFF-NONE		OFF	NONE
	ON-OFF*-NONE		OFF(MOM.)	NONE
	NONE-OFF-ON*	NONE	OFF	
	ON-NONE-OFF*		NONE	OFF(MOM.)
	OFF-NONE-ON*	OFF	NONE	
1PDT	ON-OFF-ON			
	ON-NONE-ON			
	ON-NONE-ON*			
	*ON-OFF-ON*			
	ON-OFF-ON*			
	*ON-ON-NONE			
	ON-ON-NONE			
2PST	ON-NONE-OFF		NONE	OFF
	ON-OFF-NONE		OFF	NONE
	ON-OFF*-NONE		OFF(MOM.)	NONE
	NONE-OFF-ON*	NONE	OFF	
	ON-NONE-OFF*		NONE	OFF(MOM.)
	OFF-NONE-ON*	OFF	NONE	
2PDT	ON-OFF-ON			
	ON-NONE-ON		NONE	
	ON-NONE-ON*		NONE	
	*ON-OFF-ON*			
	ON-OFF-ON*			
	*ON-ON-NONE			NONE
	ON-ON-NONE			NONE
4PST	ON-NONE-OFF		NONE	OFF
	ON-OFF-NONE		OFF	NONE
	ON-OFF*-NONE		OFF(MOM.)	NONE
	NONE-OFF-ON*	NONE	OFF	
	ON-NONE-OFF*		NONE	OFF(MOM.)
	OFF-NONE-ON*	OFF	NONE	




















\* Momentary Contact

# TOGGLE SWITCHES - ENVIRONMENTALLY SEALED SWITCHES

## Standard Circuit Arrangements

## Industrial, Econoswitch and MIL-DTL-3950 Series

### CIRCUIT WITH LEVER IN . . .

Number of Poles and Throws	Switch Circuit <sup>①</sup>	Up Position 	Center Position 	Down Position (Keyway) 
4PDT	ON-OFF-ON		OFF	
	ON-NONE-ON		NONE	
	ON-NONE-ON*		NONE	
	*ON-OFF-ON*		OFF	
	ON-OFF-ON*		OFF	
	*ON-ON-NONE			NONE
	ON-ON-NONE			NONE
				

① See page A75 for ON-ON-ON and special circuits.









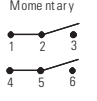
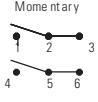

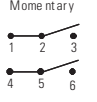




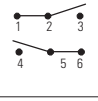
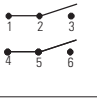
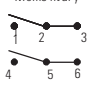


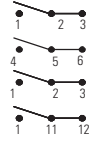
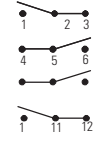
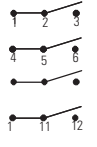
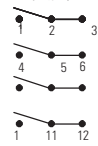
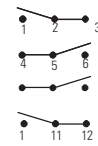
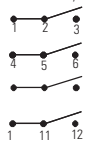
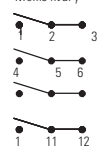
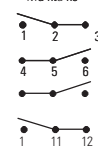
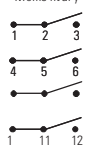
\* Momentary contact.

# TOGGLE SWITCHES - ENVIRONMENTALLY SEALED SWITCHES

## Special ON-ON-ON Circuit Arrangements for Two and Four Pole Switches

### Industrial, Econoswitch and MIL-DTL-3950 Series

Circuit with Lever in . . .

Number of Poles	Up Position 	Center Position 	Down Position (Keyway) 	Catalog Part Number
<b>TWO POLE</b>				
2	Ma nta ne 	Ma nta ne 	Ma nta ne 	8501K14, 8504K43-K55, 8511K14 8531K14, 8531K914, 8531K314 8534K14, 8534K914, 8534K314 8537K14, 8537K914, 8537K314, 8567K14
2	Ma nta ne 	Ma nta ne 	Mome nta ry 	8501K15, 8504K56-K61, 8511K15 8531K15, 8531K915, 8531K315 8534K15, 8534K915, 8534K315 8537K15, 8537K915, 8537K315, 8567K15
2	Mome nta ry 	Ma nta ne 	Mome nta ry 	8501K16, 8504K62-K64, 8511K16 8531K16, 8531K916, 8531K316 8534K16, 8534K916, 8534K316 8537K16, 8537K916, 8537K316, 8567K16
2	Ma nta ne 	Ma nta ne 	Ma nta ne 	8501K17, 8504K65-K77, 8511K17 8531K17, 8531K917, 8531K317 8567K17, 8571K17-16, 8571K17-20 8574K65-16 - 8574K77-16 8574K65-20 - 8574K77-20
2	Ma nta ne 	Ma nta ne 	Mome nta ry 	8501K18, 8504K78-K83, 8511K18 8531K18, 8531K918, 8531K318 8567K18, 8571K18-16, 8571K18-20 8574K78-16 - 8574K83-16 8574K78-20 - 8574K83-20
2	Mome nta ry 	Ma nta ne 	Mome nta ry 	8501K19, 8504K84-K87, 8511K19 8531K19, 8531K919, 8531K319 8567K19, 8571K19-16, 8571K19-20 8574K84-16, 8574K86-16 8574K84-20, 8574K86-20
<b>FOUR POLE</b>				
4	Ma nta ne 	Ma nta ne 	Ma nta ne 	8502K15, 8512K15 8532K15, 8532K915, 8532K315 8535K15, 8535K915, 8535K315 8538K15, 8538K915, 8538K315 8568K15 8575K43-16 - 8575K55-16 8575K43-20 - 8575K55-20
4	Ma nta ne 	Ma nta ne 	Mome nta ry 	8502K16, 8512K16 8532K16, 8532K916, 8532K316 8535K16, 8535K916, 8535K316 8538K16, 8538K916, 8538K316 8568K16 8575K56-16 - 8575K61-16 8575K56-20 - 8575K61-20
4	Mome nta ry 	Ma nta ne 	Mome nta ry 	8502K17, 8512K17 8532K17, 8532K917, 8532K317 8535K17, 8535K917, 8535K317 8538K17, 8538K917, 8538K317 8568K17 8575K62-16 - 8575K64-16 8575K62-20 - 8575K64-20

# TOGGLE SWITCHES - ENVIRONMENTALLY SEALED SWITCHES

## Special Circuit Arrangements for Two and Four Pole Switches

### Industrial, Econoswitch and MIL-DTL-3950 Series

#### SPECIAL "ON-ON-ON" CIRCUIT ARRANGEMENTS

"Three Independent" ON-ON-ON Circuit Diagram  
 For switch modified with "Three Independent" ON-ON-ON Special Circuit.  
 External Jumpers are required. User to connect wiring per instructions given below.

Connection Points	Single Pole <sup>①</sup>	Double Pole <sup>②</sup>
Connect Common to Terminals	2	2 and 11
Connect Circuit "A" to Terminals	6	6 and 9
Connect Circuit "B" to Terminals	4	4 and 7
Connect Circuit "C" to Terminals	1	1 and 10

Circuit Poles	No. of Poles	"A" Up Position	"B" Center Position	"C" Down Position (Keyway)
Circuit for Single Pole (Jumper between Terminals #3 & #5)	1			
Circuit for Double Pole (Jumpers between Terminals #3 & #5 #8 & #12)	2			

① Requires using a two pole switch to accomplish single pole independent "on-on-on" circuit.  
 ② Requires using a four pole switch to accomplish a double pole independent "on-on-on" circuit.  
 Note: Basic circuit same as offered with part numbers 8501K14, 8501K15 or 8501K16 for two pole devices and part numbers 8502K15, 8502K16 or 8502K17 for four pole devices.

#### SPECIAL CIRCUIT (OFF-ON-ON)

Circuit	No. of Poles	OFF Up Position	ON Center Maintained Position	ON Down Position (Keyway)	Circuit Being Made . . .	Terminal Numbers Making the Circuit
Note: Requires two poles to achieve a single pole device or four poles to achieve a double pole device.						
Circuit for Single Pole (Jumper between terminals #2 & #4). Common terminal #5. Non-functional terminal #6	2	(OFF) 	(ON) 	(ON) 	UP (OFF) CENTER (ON) DOWN (ON)	— #3 & #5 #1 & #5
Circuit for Double Pole (Jumpers between terminals #2 & #4 and #7 & #11). Common terminals #5 & #8. Non-functional terminals #6	4	(OFF) 	(ON) 	(ON) 	UP (OFF) CENTER (ON) DOWN (ON)	— #3 & #5 #8 & #12 #1 & #5 #8 & #10

#### SPECIAL PROJECTOR CIRCUIT (2 ON- 1 ON - OFF)

Circuit	No. of Poles	ON Up Position	ON Center Maintained Position	OFF Down Position (Keyway)	Circuit Being Made . . .	Terminal Numbers Making the Circuit
Note: Requires two poles to achieve a single pole device or four poles to achieve a double pole device.						
Circuit for Single Pole (Jumper between terminals #2 & #5). Common terminal #5. Non-functional terminal #1 & #4.	2	(TWO ON) 	(ONE ON) 	(OFF) 	UP (ON) CENTER (ON) DOWN (OFF)	#2 & #3 #5 & #6 #5 & #3 —
Circuit for Double Pole (Jumpers between terminals #2 & #5 and #8 & #11). Common terminals #5 & #8. Non-functional terminals #1, #4 #7 & #10.	4	(FO ON) 	(TWO ON) 	(OFF) 	UP (ON) CENTER (ON) DOWN (OFF)	#5 & #3 #5 & #6 #8 & #12 #8 & #9 #3 & #5 #8 & #12 —

# SPECIAL ON-ON-ON CIRCUITS FOR Miniature POSITIVE ACTION SWITCHES

## Circuit Arrangements

### CIRCUIT WITH LEVER IN . . .

Number of Poles	Up Position 	Center Position 	Down Position (Keyway) 	Catalog Part Number
<b>Two Pole</b>				
2	Maintained 	Maintained 	Maintained 	8856K21, K30, K31, K32 8856K21X, K30X, K31X, K32X 8856K721, K730, K731, K732 8867K9, 8867K69, 8867KA69 8869K9, 8869K9X, 8869K69, 8869K69X
2	Maintained 	Maintained 	Momentary 	8856K23, K35, K36 8856K23X, K35X, K36X 8856K723, K735, K736 8867K10, 8867K610, 8867KA610 8869K10, 8869K10X, 8869K610, 8869K610X
2	Momentary 	Maintained 	Momentary 	8856K22, K34 8856K22X, K34X 8856K722, K734 8867K11, 8867K611, 8867KA611 8869K11, 8869K11X, 8869K611, 8869K611X

### SPECIAL "ON-ON-ON" CIRCUIT ARRANGEMENTS

"Three Independent " ON-ON-ON Circuit Diagram  
 For switch modified with "Three Independent" ON-ON-ON Special Circuit.  
 External Jumpers are required. User to connect wiring per instructions given below.

Connection Points	Single Pole <sup>Ⓞ</sup>
Connect Common to Terminals	2
Connect Circuit "A" to Terminals	6
Connect Circuit "B" to Terminals	4
Connect Circuit "C" to Terminals	1

Circuit Poles	No. of Poles	Up Position 	Center Maintained Position 	Down Position (Keyway) 
Circuit for Single Pole (Jumper between Terminals #3 & #5)	1			

<sup>Ⓞ</sup>Requires using a two pole switch to accomplish single pole Independent "ON-ON-ON" circuit.

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