

# **Commercial Miniature Toggle Switches**

#### **SPECIFICATIONS**

- Originally designed to meet the requirements of MIL-S-83731 (see page 54 for Test Specifications).
- Sealed lever type with panel seal and terminal seal.
- Flatted bushing on sealed lever type.
- Solder lug or printed circuit terminals.
- · Epoxy sealed terminals.
- One and two pole circuits.
- High electrical/mechanical reliability.
- Dry circuit current carrying ability.
- Toggle lever throw 25° ±5°.

#### **MATERIAL**

- Base (body) Diallyl Phthalate.
- Lever Brass, bright chrome plated.
- Bushing Brass, nickel plated.
   Frame Stainless steel.
- Switching Contacts and Rockers 50 millionths gold over silver.
- Center Terminal 50 millionths gold over silver.
- Hardware Refer to hardware listing on page 57.

#### **CURRENT RATINGS**

Current Capacity in Amperes — Per Pole					
28 V DC	115 V AC 400 Hz	125 V AC 60 Hz			
	LAMP LOAD				
1	1	1			
RESISTIVE LOAD					
5	5	5			
INDUCTIVE LOAD					
2	2	2			

#### **LOGIC LEVEL**

10 mA @ 5 V Max. (AC or DC)

# SWITCH SELECTION TABLE — SEALED

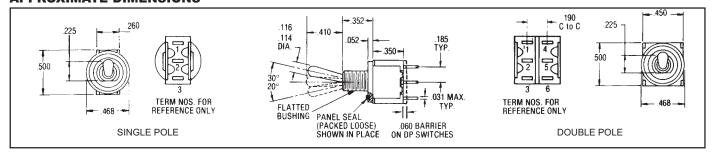
		Circuit With Lever		Catalog	Number
d	UP Position	CENTER Position	DOWN Position (Flat)	Solder Lug Terminals	Printed Circuit Terminals
All and			ONE POLE		
460	ON ON	OFF NONE	ON ON	A121S1CWZG-M8 A123S1CWZG-M8	A121S1CWCG-M8 A123S1CWCG-M8
117	ON	NONE	ON*	A126S1CWZG-M8	A126S1CWCG-M8
	ON* ON	OFF OFF	ON* ON*	A127S1CWZG-M8 A131S1CWZG-M8	A127S1CWCG-M8 A131S1CWCG-M8
	NONE	ON	ON*	A137S1CWZG-M8	A137S1CWCG-M8
П	TWO POLE				
dh	ON	OFF	ON	A221S1CWZG-M8	A221S1CWCG-M8
ASSES	ON ON	NONE NONE	ON ON*	A223S1CWZG-M8 A226S1CWZG-M8	A223S1CWCG-M8 A226S1CWCG-M8
1100	ON*	OFF	ON*	A227S1CWZG-M8	A227S1CWCG-M8
400	ON ON	OFF ON	ON* ON	A231S1CWZG-M8 A232S1CWZG-M8	A231S1CWCG-M8 A232S1CWCG-M8
. 171	ON	ON	ON*	A233S1CWZG-M8	A233S1CWCG-M8
	NONE ON*	ON ON	ON* ON*	A234S1CWZG-M8 A235S1CWZG-M8	A234S1CWCG-M8 A235S1CWCG-M8

<sup>\*</sup> Momentary Contact

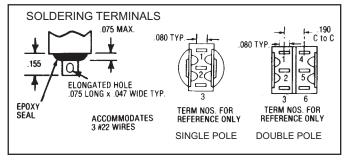
#### "ON-ON-ON" CIRCUIT DIAGRAM

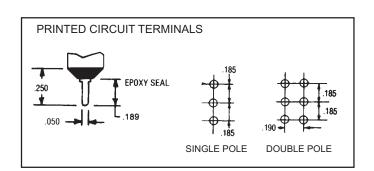
No. of Poles	Up Position	Center Maintained Position	Down Position (Keyway)
2	1 2 3	1 2 3	1 2 3

#### **APPROXIMATE DIMENSIONS**



#### **TERMINAL DIMENSIONS**







## Commercial Miniature Leverlock Toggle Switches — Unsealed

#### **SPECIFICATIONS**

- One hole mounting.
- Originally designed to meet the requirements of MIL-S-83731 (see page 54 for Test Specifications).
- Slow make, slow break contact action.
- High electrical/mechanical reliability.
- Toggle lever throw 25° ±5°.
- Solder lug or printed circuit terminals.
- One and two pole circuits.
- Dry circuit current carrying ability.
- Mounting hardware furnished unassembled

#### **MATERIAL**

- Base (body) Diallyl Phthalate.
- Locking lever Brass, nickel plated. Cap — natural adnodized aluminum supplied as standard; other colors such as red, blue, gold, black and green are also available.
- Bushing Brass, nickel plated. Frame — Stainless steel.
- Switching Contacts and Rockers 50 millionths gold over silver.
- Center Terminal 50 millionths gold over silver.
- Hardware Refer to hardware listing on page 57.

#### **CURRENT RATINGS**

Current Capacity in Amperes — Per Pole					
28 V DC	115 V AC 400 Hz	125 V AC 60 Hz			
	LAMP LOAD				
1	1	1			
RESISTIVE LOAD					
5	5	5			
INDUCTIVE LOAD					
2	2	2			

#### **LOGIC LEVEL**

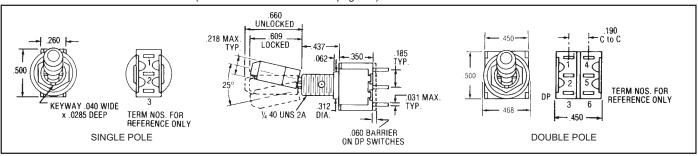
10 mA @ 5 V Max. (AC or DC)

## **LEVER LOCK SELECTION TABLE**

		Circuit W	/ith Lever		Catalog	Number
Standard Cap Style	UP Position	CENTER Position	DOWN Position (Keyway)	Lever Lock Bushing Style	Solder Lug Terminals	Printed Circuit Terminals
•			0	NE POLE		
W	ON ► ON ►	<b></b> OFF ►  NONE	∢ ON ∢ ON	1 2	A121K12KZG-M8 A123K12KZG-M8	A121K12KCG-M8 A123K12KCG-M8
SPDT	ON ▶	NONE	ON*	3	A126K12KZG-M8	A125K12KCG-W8
200	ON*	<b></b> ◆OFF ►	ON*	4	A127K12KZG-M8	A127K12KCG-M8
133	ON►	∢OFF▶	ON*	5	A131K12KZG-M8	A131K12KCG-M8
111		i	TV	VO POLE		
<b>W</b>	ON►	∢OFF▶	<b>∢</b> ON	1	A221K12KZG-M8	A221K12KCG-M8
<b>63</b>	ON▶	NONE	<b>⋖</b> ON	2	A223K12KZG-M8	A223K12KCG-M8
and the	ON▶	NONE	ON*	3	A226K12KZG-M8	A226K12KCG-M8
NAME OF TAXABLE PARTY.	ON*	<b> ◆</b> OFF ▶	ON*	4	A227K12KZG-M8	A227K12KCG-M8
2.40	ON▶	<b></b> ◆OFF ►	ON*	5	A231K12KZG-M8	A231K12KCG-M8
DPDT	ON►	∢ON▶	<b>∢</b> ON	1	A232K12KZG-M8	A232K12KCG-M8

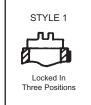
<sup>\*</sup> Momentary Contact

## APPROXIMATE DIMENSIONS (For terminal dimensions see page 49)



#### **LEVER LOCK BUSHING STYLES**

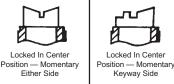
(The descriptive illustrations below are for pictorial representation only — keyway on right hand side)











STYLE 5

#### "ON-ON-ON" CIRCUIT DIAGRAM

No. of Poles	Up Position	Center Maintained Position	Down Position (Keyway)
2	i 2 3	2 3	1 2 3

<sup>▶</sup> Indicates direction against which lever is locked.



# Commercial Miniature Toggle Switches Right Angle Mount (Vertical) P.C. Terminals

#### **SPECIFICATIONS**

- Originally designed to meet the requirements of MIL-S-83731 (see page 54 for Test Specifications).
- Sealed lever type with panel seal and terminal seal.
- Right angle mount (vertical) printed circuit terminals.
- Epoxy sealed printed circuit terminals.
- One and two pole circuits.
- High electrical/mechanical reliability.
- Dry circuit current carrying ability.
- Toggle lever throw 25° ±5°.

#### **MATERIAL**

- Base (body) Diallyl Phthalate.
- Lever Brass, bright chrome plated.
- Bushing Brass, nickel plated.
   Frame Stainless steel.
- Switching Contacts and Rockers 50 millionths gold over silver.
- Center Terminal 50 millionths gold over silver.
- Hardware None required.

#### **CURRENT RATINGS**

Current Capacity in Amperes — Per Pole					
28 V DC	115 V AC 400 Hz	125 V AC 60 Hz			
	LAMP LOAD				
1	1	1			
RESISTIVE LOAD					
5	5	5			
INDUCTIVE LOAD					
2	2	2			

#### **LOGIC LEVEL**

10 mA @ 5 V Max. (AC or DC)

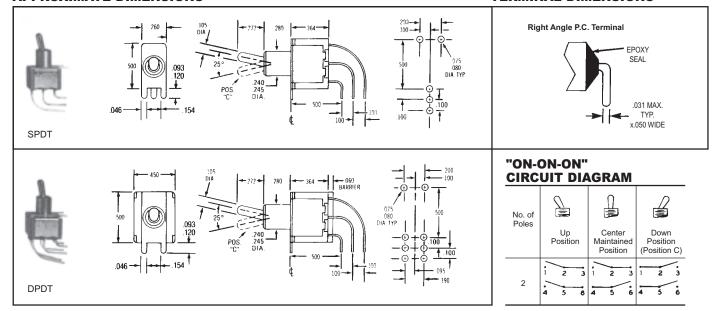
#### **SWITCH SELECTION TABLE — SEALED**

1 73	Cir	rcuit With Lever In		
J.	UP Position	CENTER Position	DOWN Position (Position C)	Catalog Number
Territoria.	ONE POLE			
The second	ON	OFF	ON	A121M1D9AVG-M8
((-	ON	NONE	ON	A123M1D9AVG-M8
-	ON	NONE	ON*	A126M1D9AVG-M8
SPDT	ON*	OFF	ON*	A127M1D9AVG-M8
25D1	ON	OFF	ON*	A131M1D9AVG-M8
	NONE	ON	ON*	A134M1D9AVG-M8
9.	TWO POLE			
J.	ON	OFF	ON	A221M1D9AVG-M8
101	ON	NONE	ON	A223M1D9AVG-M8
grade from	ON	NONE	ON*	A226M1D9AVG-M8
5550	ON*	OFF	ON*	A227M1D9AVG-M8
Annual Contract of the Party of	ON	OFF	ON*	A231M1D9AVG-M8
1	ON	ON	ON	A232M1D9AVG-M8
	ON	ON	ON*	A233M1D9AVG-M8
DPDT	NONE	ON	ON*	A234M1D9AVG-M8
2. 51	ON*	ON	ON*	A235M1D9AVG-M8

<sup>\*</sup> Momentary Contact

#### **APPROXIMATE DIMENSIONS**

#### **TERMINAL DIMENSIONS**





# Commercial Miniature Toggle Switches Right Angle Mount (Horizontal) P.C. Terminals

#### **SPECIFICATIONS**

- Originally designed to meet the requirements of MIL-S-83731 (see page 54 for Test Specifications).
- Sealed lever type with terminal seal.
- Right angle mount (horizontal) printed circuit terminals.
- Epoxy sealed printed circuit terminals.
- One and two pole circuits.
- High electrical/mechanical reliability.
- · Dry circuit current carrying ability.
- Toggle lever throw 25° ±5°.

#### **MATERIAL**

- Base (body) Diallyl Phthalate.
- Lever Brass, bright chrome plated.
- Bushing Brass, nickel plated.
   Frame Stainless steel.
- Switching Contacts and Rockers 50 millionths gold over silver.
- Center Terminal 50 millionths gold over silver.
- Hardware None required.

#### **CURRENT RATINGS**

Current Capacity in Amperes — Per Pole				
28 V DC	115 V AC 400 Hz	125 V AC 60 Hz		
	LAMP LOAD	_		
1	1	1		
RESISTIVE LOAD				
5	5	5		
INDUCTIVE LOAD				
2	2	2		

#### **LOGIC LEVEL**

10 mA @ 5 V Max. (AC or DC)

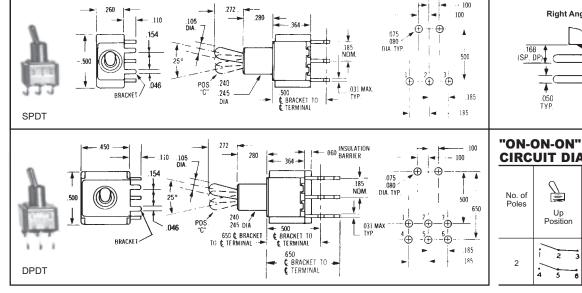
#### **SWITCH SELECTION TABLE — SEALED**

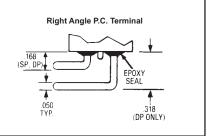
	Cir	rcuit With Lever In			
1	UP Position	CENTER Position	DOWN Position (Position C)	Catalog Number	
.m	ONE POLE				
The same of	ON	OFF	ON	A121M1D9AG-M8	
1000	ON	NONE	ON	A123M1D9AG-M8	
111	ON	NONE	ON*	A126M1D9AG-M8	
SPDT	ON*	OFF	ON*	A127M1D9AG-M8	
2501	ON	OFF	ON*	A131M1D9AG-M8	
	NONE	ON	ON*	A134M1D9AG-M8	
			TWO POLE		
1	ON	OFF	ON	A221M1D9AG-M8	
m	ON	NONE	ON	A223M1D9AG-M8	
of the	ON	NONE	ON*	A226M1D9AG-M8	
CHRIS	ON*	OFF	ON*	A227M1D9AG-M8	
12.72	ON	OFF	ON*	A231M1D9AG-M8	
200	ON	ON	ON	A232M1D9AG-M8	
1.1.1	ON	ON	ON*	A233M1D9AG-M8	
DPDT	NONE	ON	ON*	A234M1D9AG-M8	
	ON*	ON	ON*	A235M1D9AG-M8	

<sup>\*</sup> Momentary Contact

#### **APPROXIMATE DIMENSIONS**

#### **TERMINAL DIMENSIONS**





No. of Poles Up Position Position Position Position C



# **Commercial Miniature Toggle Switches - New Four Pole**

#### **SPECIFICATIONS**

- Originally designed to meet the requirements of MIL-S-83731 (see page 54 for Test Specifications).
- Sealed lever type with panel seal and terminal seal.
- Flatted bushing on sealed lever type.
- Solder lug or printed circuit terminals.
- · Epoxy sealed terminals.
- One and two pole circuits.
- High electrical/mechanical reliability.
- Dry circuit current carrying ability.
- Toggle lever throw 25° ±5°.

#### **MATERIAL**

- Base (body) Diallyl Phthalate.
- Lever Brass, bright chrome plated.
- Locking Lever Brass, nickel plated.
   Cap natural anodized aluminum supplied as standard; other colors such as red, blue, gold, black and green are also available.
- Bushing Brass, nickel plated. Frame Stainless steel.
- Switching Contacts and Rockers 50 millionths gold over silver.
- Center Terminal 50 millionths gold over silver.
- Hardware Refer to hardware listing on page 57.

#### **CURRENT RATINGS**

Current Capacity in Amperes — Per Pole				
28 V DC	115 V AC 400 Hz	125 V AC 60 Hz		
	LAMP LOAD			
1	1	1		
RESISTIVE LOAD				
5	5	5		
INDUCTIVE LOAD				
2	2	2		

#### **LOGIC LEVEL**

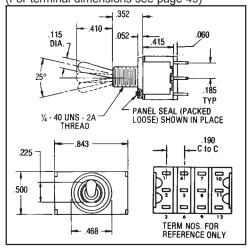
#### **SWITCH SELECTION TABLE — SEALED**

	C	Circuit With Lever In	Catalog Number		
1	UP Position	CENTER Position	DOWN Position (Flat)	Solder Lug Terminals	Printed Circuit Terminals
4-PDT	ON ON ON ON* ON ON ON NONE ON*	OFF NONE NONE OFF OFF ON ON ON	ON ON ON* ON* ON ON ON* ON*	A421S1CWZG-M8 A423S1CWZG-M8 A426S1CWZG-M8 A427S1CWZG-M8 A431S1CWZG-M8 A432S1CWZG-M8 A433S1CWZG-M8 A434S1CWZG-M8 A435S1CWZG-M8 A435S1CWZG-M8	A421S1CWCG-M8 A423S1CWCG-M8 A426S1CWCG-M8 A427S1CWCG-M8 A431S1CWCG-M8 A432S1CWCG-M8 A434S1CWCG-M8 A434S1CWCG-M8 A435S1CWCG-M8

<sup>\*</sup> Momentary Contact

#### **APPROXIMATE DIMENSIONS**

(For terminal dimensions see page 49)

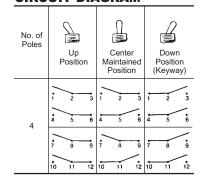


#### **LEVER LOCK SELECTION TABLE — UNSEALED**

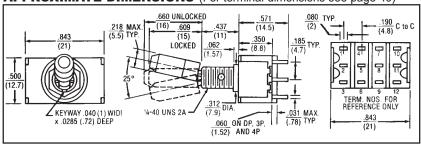
	Circuit With Lever In				Catalog Number	
Standard Cap Style	UP Position	CENTER Position	DOWN Position (Keyway)	Lever Lock Bushing Style	Solder Lug Terminals	Printed Circuit Terminals
FOUR POLE	ON ► ON ► ON ► ON ►	◆ OFF ► NONE NONE ◆ OFF ► ◆ ON ►		1 2 3 4 5 1	A421K12KZG-M8 A425K12KZG-M8 A426K12KZG-M8 A427K12KZG-M8 A431K12KZG-M8 A432K12KZG-M8	A421K12KCG-M8 A423K12KCG-M8 A426K12KCG-M8 A427K12KCG-M8 A431K12KCG-M8 A432K12KCG-M8

<sup>\*</sup> Momentary Contact

### "ON-ON-ON" CIRCUIT DIAGRAM



### APPROXIMATE DIMENSIONS (For terminal dimensions see page 49)



NOTE: FOR LEVER LOCK BUSHING STYLES SEE PAGE 50.

<sup>▶</sup> Indicates direction against which lever is locked.



# **Rating, Cross Reference and Engineering Data**

# "A" Series Originally Designed To Meet the Following MIL Specifications

	Test Requirement	MIL Specification				
1.	Strength of Terminal	1 lb. — solder lug				
	Strength of Actuating Lever Pivot and Stop	10 lbs. & 8 lbs. throughout range				
3.	Strength of Mounting Means	15 lbs. in. torque on bushing				
4.	Dielectric (Sea Level) Indication Dielectric (Altitude)	1000 VAC Group C 750 VAC after electrical endurance. 500 μA max. leakage				
5.	Contact Voltage Drop	2.5 millivolt initial 5.0 millivolt after mechanical endurance @ 2-6 VDC 0.1 amp.				
6.	Temperature Rise	50°C rise @ rated resistance after endurance test current				
7.	Short Circuit	10 operations make and carry 100 amps resistive load @ lowest DC volts				
8.	Mechanical Life	20K operations at specified high and low temperatures				
9.	Electrical Endurance	10K operations at specified high and low temperatures				
10.	Overload	50 operations @ 150% of rated resistive load				
11.	A) Electrical Endurance     at Altitude	No requirement				
	B) Electrical Endurance at Sea Level	10K operations resistive load @ room temperature 10K operations inductive load @ room temperature 10K operations lamp load @ room temperature Performed on different test samples				
12.	Vibration	Method 204 of MIL-STD-202, test condition A .06 D.A. or 10 G's 10-500 Hz 10 usec. max. chatter				
13.	Shock	Fuse-method 213 or MIL-STD @75 G's 10 usec. max, chatter				
14.	Salt Spray Test Upon Completion	48 hours — method 101 of MIL-STD-202, test condition B 10 operations resistive load (toggle sealed switches only)				
15.	Moisture Resistance Test Upon Completion	Method 106 of MIL-STD-202 100 VDC potential between current carrying parts and panel				
16.	Sand & Dust	Method 110 of MIL-STD-202, test condition B 6 hours @ 23°C 2.5K operations mechanical life (toggle sealed switches only)				
17.	Explosion	MIL-STD-202 method 109, maximum rated DC inductive load (toggle sealed switches only)				
18.	Sealing	Toggle seal — 5 operations under 0.5 inches of H <sub>2</sub> O above top of bushing				
19.	A) Toggle Seal     B) Bushing Seal	No requirement				
20.	Temperature Operation	Mechanical life, -25°C to +71°C				
21.	Life Low Cur. Level	No requirement				
22.	Fungus	No requirement				
23.	Intermediate Current	10K operations, 50 milliamps @ 10 VDC resistive load @ 20,000 feet altitude @ room temperature				
24.	Thermal Shock	Method 107 of MIL-STD-202 test condition A 5 cycles @ -55°C/+85°C				

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8858K44 PS83-121G 1-1825192-0 A201SCWZB04 A207SYCB04 A208J61ZQ0004 A221T1TCQ A232M1YCQ A323S1CWZQ
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