

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 $25^\circ \pm 5^\circ$.

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

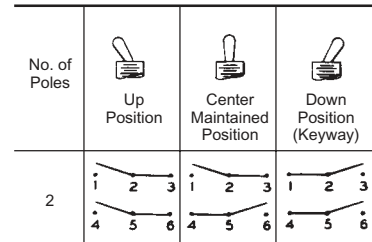
| |
|-----------------------------|
| 10 mA @ 5 V Max. (AC or DC) |
|-----------------------------|

SWITCH SELECTION TABLE — SEALED

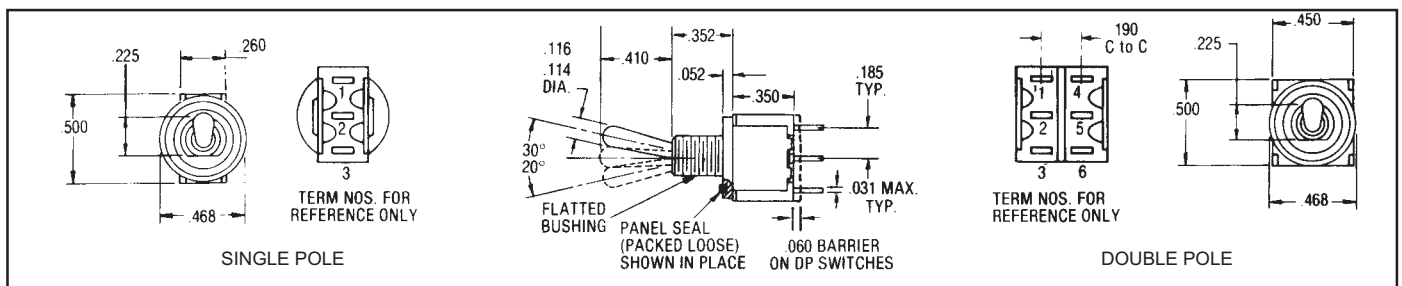
| | Circuit With Lever | | | Catalog Number | |
|--|--------------------|-----------------|----------------------|----------------------|---------------------------|
| | UP Position | CENTER Position | DOWN Position (Flat) | Solder Lug Terminals | Printed Circuit Terminals |
|  | ONE POLE | | | | |
|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

* Momentary Contact

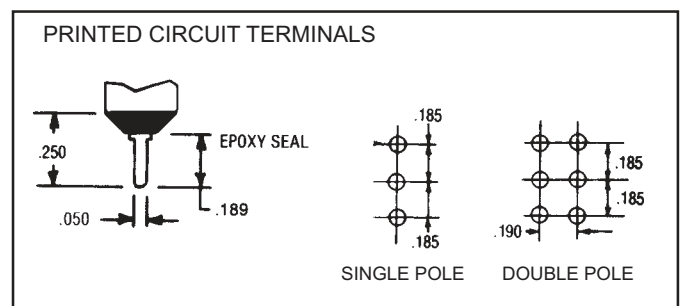
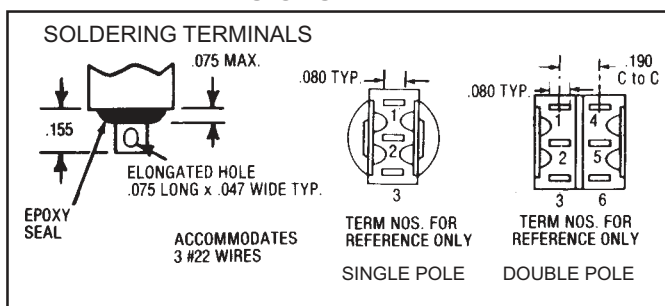
"ON-ON-ON" CIRCUIT DIAGRAM



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 $25^\circ \pm 5^\circ$.
- 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 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

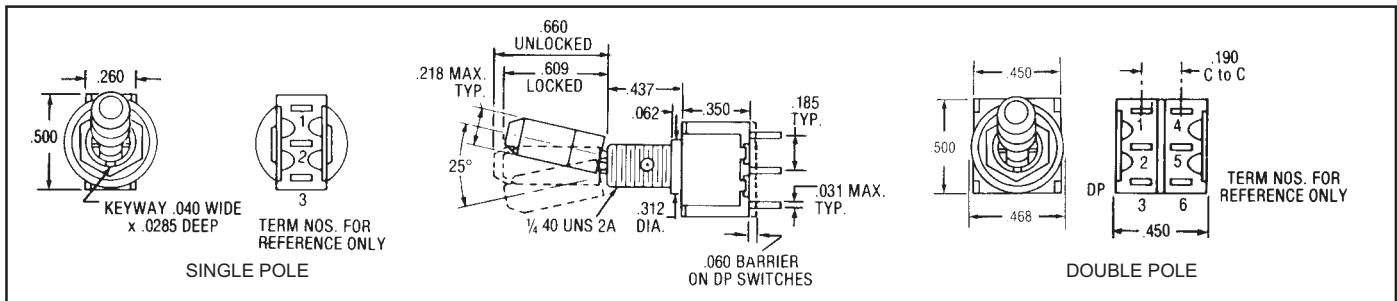
| |
|-----------------------------|
| 10 mA @ 5 V Max. (AC or DC) |
|-----------------------------|

LEVER LOCK SELECTION TABLE

| Standard Cap Style | Circuit With Lever | | | | Catalog Number | |
|--|--------------------|-----------------|------------------------|--------------------------|----------------------|---------------------------|
| | UP Position | CENTER Position | DOWN Position (Keyway) | Lever Lock Bushing Style | Solder Lug Terminals | Printed Circuit Terminals |
|  <p>SPDT</p> <p>DPDT</p> | ONE POLE | | | | | |
| | ON ▶ | ◀ OFF ▶ | ◀ ON | 1 | A121K12KZG-M8 | A121K12KCG-M8 |
| | ON ▶ | NONE | ◀ ON | 2 | A123K12KZG-M8 | A123K12KCG-M8 |
| | ON ▶ | NONE | ON* | 3 | A126K12KZG-M8 | A126K12KCG-M8 |
| | ON* | ◀ OFF ▶ | ON* | 4 | A127K12KZG-M8 | A127K12KCG-M8 |
| | ON ▶ | ◀ OFF ▶ | ON* | 5 | A131K12KZG-M8 | A131K12KCG-M8 |
| | TWO POLE | | | | | |
| | ON ▶ | ◀ OFF ▶ | ◀ ON | 1 | A221K12KZG-M8 | A221K12KCG-M8 |
| | ON ▶ | NONE | ◀ ON | 2 | A223K12KZG-M8 | A223K12KCG-M8 |
| | ON ▶ | NONE | ON* | 3 | A226K12KZG-M8 | A226K12KCG-M8 |
| ON* | ◀ OFF ▶ | ON* | 4 | A227K12KZG-M8 | A227K12KCG-M8 | |
| ON ▶ | ◀ OFF ▶ | ON* | 5 | A231K12KZG-M8 | A231K12KCG-M8 | |
| ON ▶ | ◀ ON ▶ | ◀ ON | 1 | A232K12KZG-M8 | A232K12KCG-M8 | |

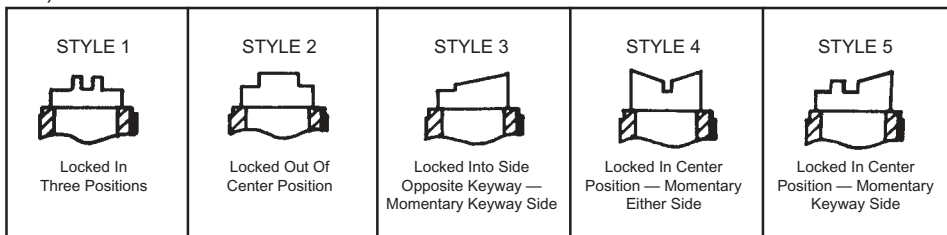
* Momentary Contact
▶ Indicates direction against which lever is locked.

APPROXIMATE DIMENSIONS (For terminal dimensions see page 49)

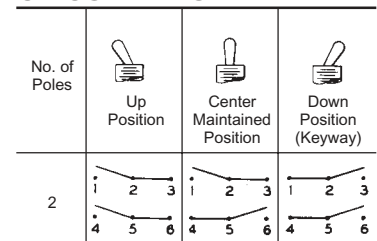


LEVER LOCK BUSHING STYLES

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



"ON-ON-ON" CIRCUIT DIAGRAM



**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 $25^\circ \pm 5^\circ$.

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

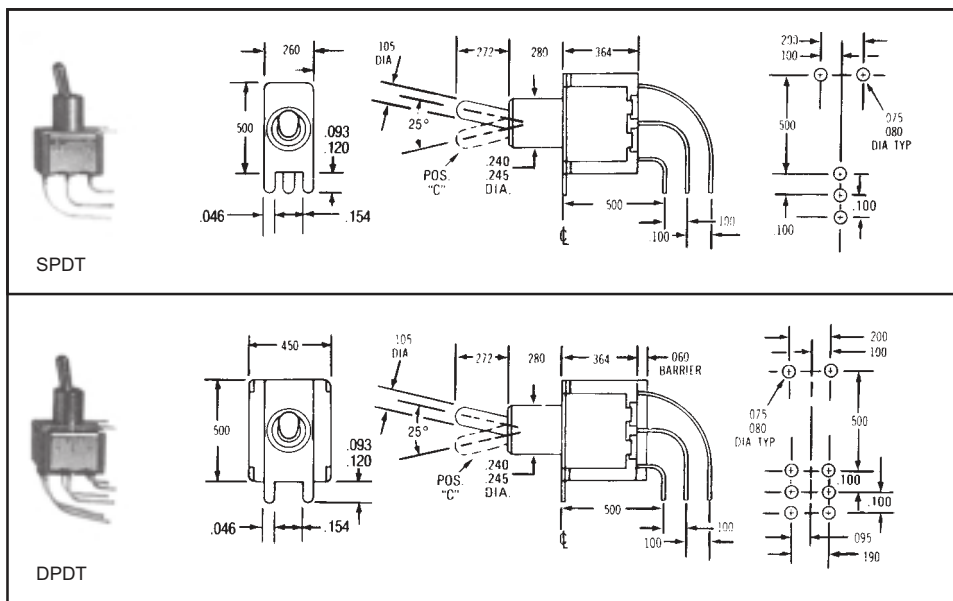
| |
|-----------------------------|
| 10 mA @ 5 V Max. (AC or DC) |
|-----------------------------|

SWITCH SELECTION TABLE — SEALED

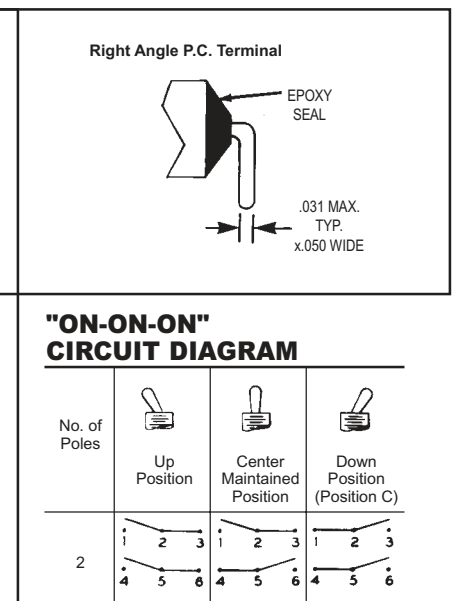
| | Circuit With Lever In... | | | Catalog Number |
|--|--------------------------|-----------------|----------------------------|----------------|
| | UP Position | CENTER Position | DOWN Position (Position C) | |
|  SPDT | ONE POLE | | | |
| | ON | OFF | ON | A121M1D9AVG-M8 |
| | ON | NONE | ON | A123M1D9AVG-M8 |
| | ON | NONE | ON* | A126M1D9AVG-M8 |
| | ON* | OFF | ON* | A127M1D9AVG-M8 |
| | ON | OFF | ON* | A131M1D9AVG-M8 |
| | NONE | ON | ON* | A134M1D9AVG-M8 |
|  DPDT | TWO POLE | | | |
| | ON | OFF | ON | A221M1D9AVG-M8 |
| | ON | NONE | ON | A223M1D9AVG-M8 |
| | ON | NONE | ON* | A226M1D9AVG-M8 |
| | ON* | OFF | ON* | A227M1D9AVG-M8 |
| | ON | OFF | ON* | A231M1D9AVG-M8 |
| | ON | ON | ON | A232M1D9AVG-M8 |
| | ON | ON | ON* | A233M1D9AVG-M8 |
| | NONE | ON | ON* | A234M1D9AVG-M8 |
| | ON* | ON | ON* | A235M1D9AVG-M8 |

* 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 $25^\circ \pm 5^\circ$.

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

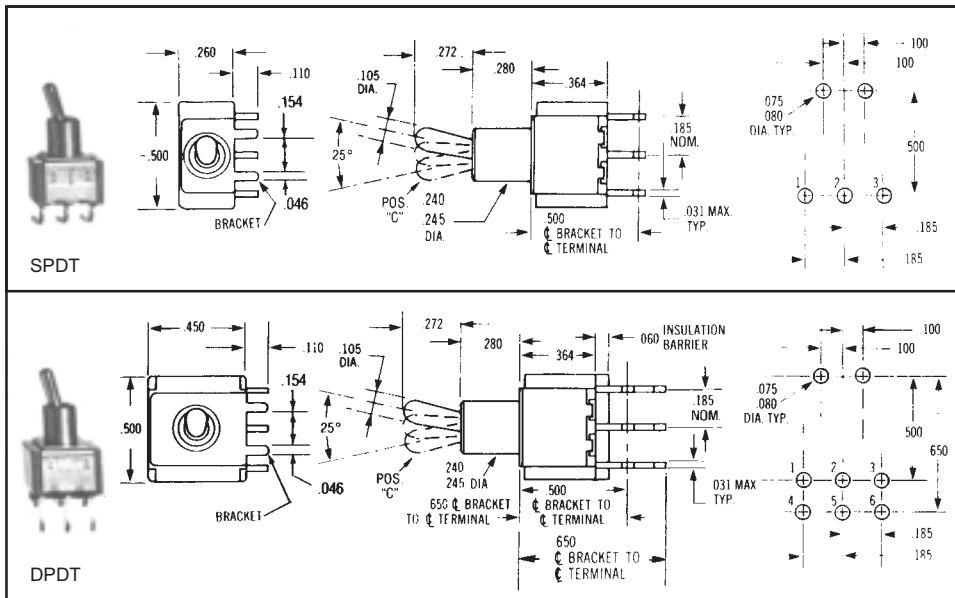
10 mA @ 5 V Max. (AC or DC)

SWITCH SELECTION TABLE — SEALED

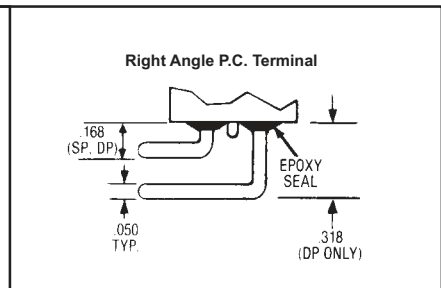
| | Circuit With Lever In... | | | Catalog Number |
|--|--------------------------|-----------------|----------------------------|----------------|
| | UP Position | CENTER Position | DOWN Position (Position C) | |
|  SPDT | ON | OFF | ON | A121M1D9AG-M8 |
| | ON | NONE | ON | A123M1D9AG-M8 |
| | ON | NONE | ON* | A126M1D9AG-M8 |
| | ON* | OFF | ON* | A127M1D9AG-M8 |
| | ON | OFF | ON* | A131M1D9AG-M8 |
| | NONE | ON | ON* | A134M1D9AG-M8 |
|  DPDT | ON | OFF | ON | A221M1D9AG-M8 |
| | ON | NONE | ON | A223M1D9AG-M8 |
| | ON | NONE | ON* | A226M1D9AG-M8 |
| | ON* | OFF | ON* | A227M1D9AG-M8 |
| | ON | OFF | ON* | A231M1D9AG-M8 |
| | ON | ON | ON | A232M1D9AG-M8 |
| | ON | ON | ON* | A233M1D9AG-M8 |
| | NONE | ON | ON* | A234M1D9AG-M8 |
| | ON* | ON | ON* | A235M1D9AG-M8 |

* Momentary Contact

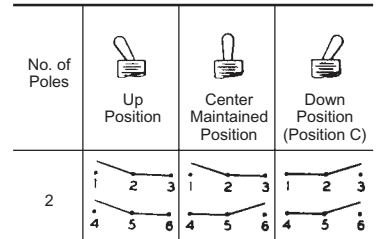
APPROXIMATE DIMENSIONS



TERMINAL DIMENSIONS



"ON-ON-ON" CIRCUIT DIAGRAM



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


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

SWITCH SELECTION TABLE — SEALED

| | Circuit With Lever In... | | | Catalog Number | |
|--|--------------------------|-----------------|----------------------|----------------------|---------------------------|
| | UP Position | CENTER Position | DOWN Position (Flat) | Solder Lug Terminals | Printed Circuit Terminals |
|  4-PDT | ON | OFF | ON | A421S1CWZG-M8 | A421S1CWCG-M8 |
| | ON | NONE | ON | A423S1CWZG-M8 | A423S1CWCG-M8 |
| | ON | NONE | ON* | A426S1CWZG-M8 | A426S1CWCG-M8 |
| | ON* | OFF | ON* | A427S1CWZG-M8 | A427S1CWCG-M8 |
| | ON | OFF | ON* | A431S1CWZG-M8 | A431S1CWCG-M8 |
| | ON | ON | ON | A432S1CWZG-M8 | A432S1CWCG-M8 |
| | ON | ON | ON* | A433S1CWZG-M8 | A433S1CWCG-M8 |
| | NONE | ON | ON* | A434S1CWZG-M8 | A434S1CWCG-M8 |
| | ON* | ON | ON* | A435S1CWZG-M8 | A435S1CWCG-M8 |

* Momentary Contact

LEVER LOCK SELECTION TABLE — UNSEALED

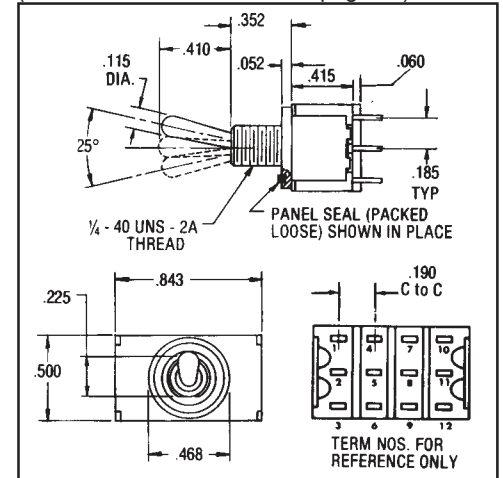
| Standard Cap Style | Circuit With Lever In... | | | Lever Lock Bushing Style | Catalog Number | |
|--|--------------------------|-----------------|------------------------|--------------------------|----------------------|---------------------------|
| | UP Position | CENTER Position | DOWN Position (Keyway) | | Solder Lug Terminals | Printed Circuit Terminals |
|  FOUR POLE | ON ► | ◄ OFF ► | ◄ ON | 1 | A421K12KZG-M8 | A421K12KCG-M8 |
| | ON ► | NONE | ◄ ON | 2 | A423K12KZG-M8 | A423K12KCG-M8 |
| | ON ► | NONE | ON* | 3 | A426K12KZG-M8 | A426K12KCG-M8 |
| | ON* | ◄ OFF ► | ON* | 4 | A427K12KZG-M8 | A427K12KCG-M8 |
| | ON ► | ◄ OFF ► | ON* | 5 | A431K12KZG-M8 | A431K12KCG-M8 |
| | ON ► | ◄ ON ► | ◄ ON | 1 | A432K12KZG-M8 | A432K12KCG-M8 |

* Momentary Contact

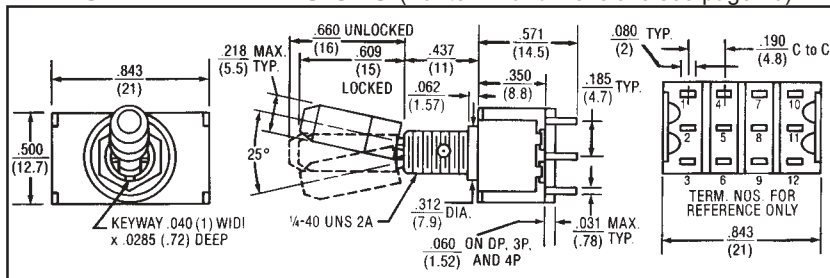
► Indicates direction against which lever is locked.

APPROXIMATE DIMENSIONS

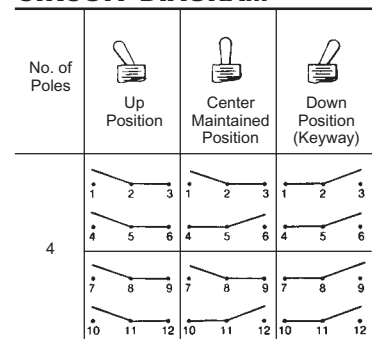
(For terminal dimensions see page 49)



APPROXIMATE DIMENSIONS (For terminal dimensions see page 49)



"ON-ON-ON" CIRCUIT DIAGRAM



NOTE: FOR LEVER LOCK BUSHING STYLES SEE PAGE 50.

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 |
| 2. 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 μ A 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 ₂ 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 |