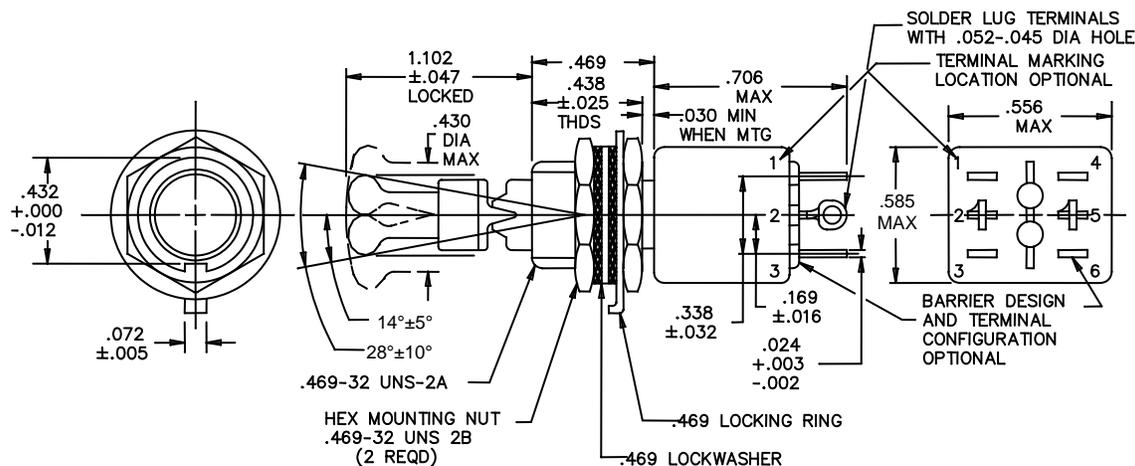


DETAIL SPECIFICATION SHEET

SWITCH, TOGGLE, POSITIVE BREAK,  
 LEVER LOCK, MINIATURE, TOGGLE SEALED,  
 SOLDER LUG, DOUBLE POLE, .469 MOUNTING BUSHING

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-8834.



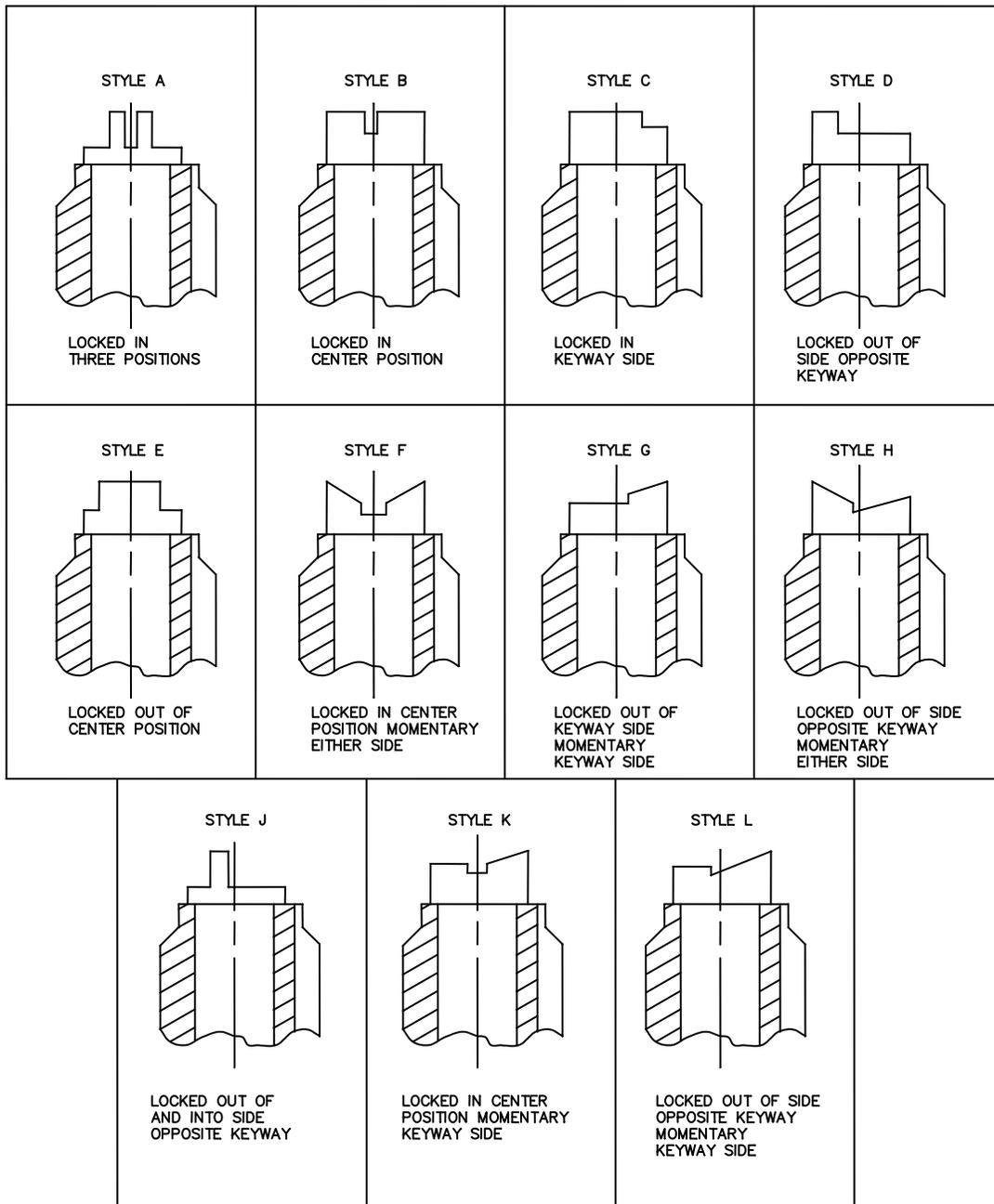
Inches	mm	Inches	mm	Inches	mm	Inches	mm
.002	0.05	.024	0.61	.052	1.32	.438	11.13
.003	0.08	.025	0.64	.072	1.83	.469	11.91
.005	0.13	.030	0.76	.169	4.29	.556	14.12
.010	0.25	.032	0.81	.338	8.59	.572	14.53
.012	0.30	.045	1.14	.430	10.92	.706	17.93
.016	0.41	.047	1.19	.432	10.97	1.102	27.99

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are  $\pm .010$  for decimals and  $\pm .5^\circ$  for angles.
4. Design of switch case housing, terminals and barriers is optional provided that the specified dimensions are not exceeded.
5. For hardware detail specifications, see appendix of MIL-DTL-8834.
6. Nonfunctional terminals shall not be supplied.

FIGURE 1. Switches with .469 inch mounting bushing.

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W/Amendment 1



NOTE: This figure is for illustration of operating characteristics only, not the actual detail design.

FIGURE 2. Lever locking configurations.

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REQUIREMENTS:

Design and construction: See figure 1. For switches with center-on circuits, the nontearable requirement is not applicable; delayed action of the toggle lever may cause circuit to close or open before snap action occurs.

Switching characteristics: See table I. Direction of the movement of internal mechanism is opposite to the direction of the toggle lever movement.

Unlocking force:  $4 \pm 1$  pounds.

Weight: .066 pound maximum.

Strength of terminals: Applied force shall be 5 pounds minimum normal to the mounting plane and 2 pounds minimum in other planes.

Dielectric withstanding voltage:

At atmospheric pressure: For switches with center-on circuits, dielectric withstanding test voltage shall be 1,200 V rms at sea level.

At reduced barometric pressure: Switches shall be tested in accordance with MIL-STD-202, method 105, test condition B (50,000 feet).

Shock: Method I (100 g, sawtooth) and method II (high impact). The switch shall be electrically and mechanically operative at the conclusion of the shock test, except there can be mechanical transfer of the contact mechanism at all levels when tested in accordance with method II.

Sealing: Toggle seal.

MS21437-(700 and 800 series): Method I (15 foot head of water).

MS21437-(200 and 300 series): Method II (0.5 inch head of water).

Electrical endurance: Altitude tests are to be conducted while at a pressure equivalent of 50,000 feet.

Resistive loads:

28 V dc: 5 amperes.

115 V ac, 400 Hz: 3 amperes.

115 V ac, 60 Hz: 2 amperes at room temperature and pressure only.

Inductive loads:

28 V dc: 1 ampere with time constant of  $.020 \pm .002$  second.

115 V ac, 400 Hz: 2 amperes.

115 V ac, 60 Hz: 1 ampere at room temperature and pressure only.

Electrical life, low level switching: Contact resistance shall not exceed 50 ohms on any single contact closure.

Contact load: Each switch contact shall make, carry, and break a resistive load of 25 microamperes maximum at an open circuit voltage of 5 millivolts dc maximum.

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Monitoring circuit: Monitoring equipment shall provide a record of the number of cycles and shall record failures or discontinue the test if a failure occurs. Each contact closure shall be monitored.

Part or Identifying Number (PIN):

Example:

MS21437- F 841

Locking configuration letter: \_\_\_\_\_  
(see table I and figure 2)

Dash number: \_\_\_\_\_  
(see table 1)

PIN MS21437-F841 identifies a switch with lever locking configuration F, locked (on) in center position, momentary (on) both sides, with method I toggle lever seal.

TABLE I. Switching characteristics.

PIN <u>1/ 2/</u> MS21437		Available locking configurations	Circuits made between terminals as indicated with the toggle lever in these positions:		
			Opposite keyway side	Center position	Keyway side
-711	-211	A, B, D	On 2-3, 5-6	Off	On 1-2, 4-5
-721	-221	C, E		None	Off
-731	-231				On 1-2, 4-5
-741	-241	J, B		Off	None
-811	-311	G, K, L			Mom-on 1-2, 4-5
-821 <u>3/</u>	-321 <u>3/</u>	K	None	On 2-3, 5-6	Mom-on 1-2, 4-5
-831 <u>3/</u>	-331 <u>3/</u>	A, B, C, D	On 2-3, 5-6		On 1-2, 4-5
-841 <u>3/</u>	-341 <u>3/</u>	F, H	Mom-on 2-3, 5-6		Mom-on 1-2, 4-5
-851 <u>3/</u>	-351 <u>3/</u>	G, K, L			
-881	-381	K	None		
-871	-371	F, H	Mom-on 2-3, 5-6	Off	

1/ Series 700 and 800 dash numbers have method I toggle seal (15 foot head of water). Series 200 and 300 dash numbers have method II toggle seal (0.5 inch head of water).

2/ PIN's MS21437-771, -781, -271 and -281 have been canceled and replaced by MS21437-871, -881, -371 and -381 respectively.

3/ For center-on circuits, delayed action of the toggle lever may cause circuit to close or open before snap action mechanism trips.

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Changes from previous issue. The margins of this amendment are marked with vertical lines to indicate where modifications from this revision were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents:

MIL-DTL-8834  
MIL-STD-202

Custodian:

Army - CR  
Navy - AS  
Air Force - 85  
DLA - CC

Preparing activity:

DLA - CC

(Project 5930-2012-024)

Review activity:

Army - MI  
Navy - EC  
Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps.dla.mil/> .