INCH-POUND

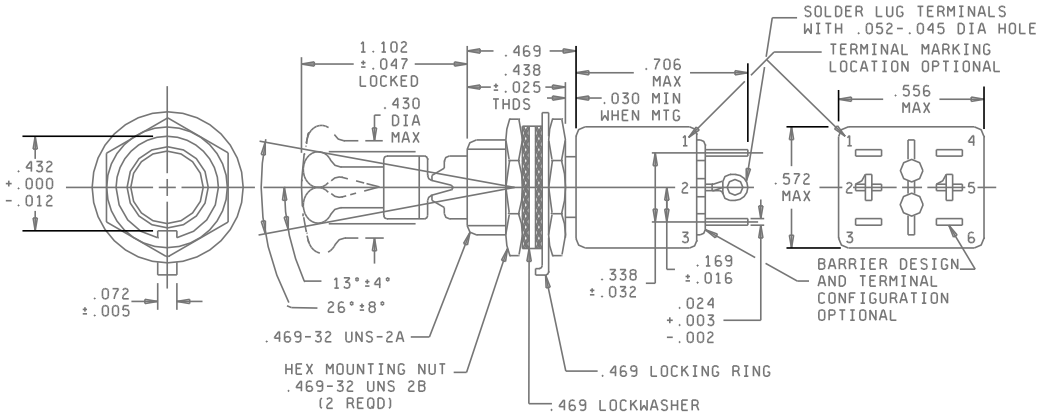
MS21437G
30 December 1994
SUPERSEDING
MS21437F
4 September 1991

MILITARY 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 the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-S-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 ±.010 for decimals and ±.5° 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-S-8834.
6. Nonfunctional terminals shall not be supplied.

FIGURE 1. Switches with .469 inch mounting bushing.

G denotes changes

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

FIGURE 2. Lever locking configurations.

REQUIREMENTS:

Design and construction: See figure 1. For switches with center-on circuits, the nonteasable 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 ±1 pounds.

Weight: .064 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 1200 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 methods 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 ±.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.

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 I)

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 1/ 2/ 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 3/	-321 3/	K	None	On 2-3, 5-6	Mom-on 1-2, 4-5
-831 3/	-331 3/	A, B, C, D	On 2-3, 5-6		On 1-2, 4-5
-841 3/	-341 3/	F, H	Mom-on 2-3, 5-6		Mom-on 1-2, 4-5
-851 3/	-351 3/	G, K, L			
-881	-381	K	None	Off	
-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 cancelled 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.

G CONCLUDING MATERIAL

Custodian:
Air Force - 85
Navy - AS
Army - ER

Review activity:
Navy - EC
Air Force - 99
DLA - ES

User activity:
Army - MI

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5930-1564)