INCH-POUND
MS27781D
18 April 2011
SUPERSEDING
MS27781C
28 September 1987

DETAIL SPECIFICATION SHEET

SWITCH, TOGGLE, ONE POLE, ENVIRONMENTALLY SEALED, LEVER LOCK, INTEGRATED WIRE TERMINALS

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

The complete requirements for acquiring the switch described herein shall consist of this specification and the latest issue of MIL-DTL-3950.

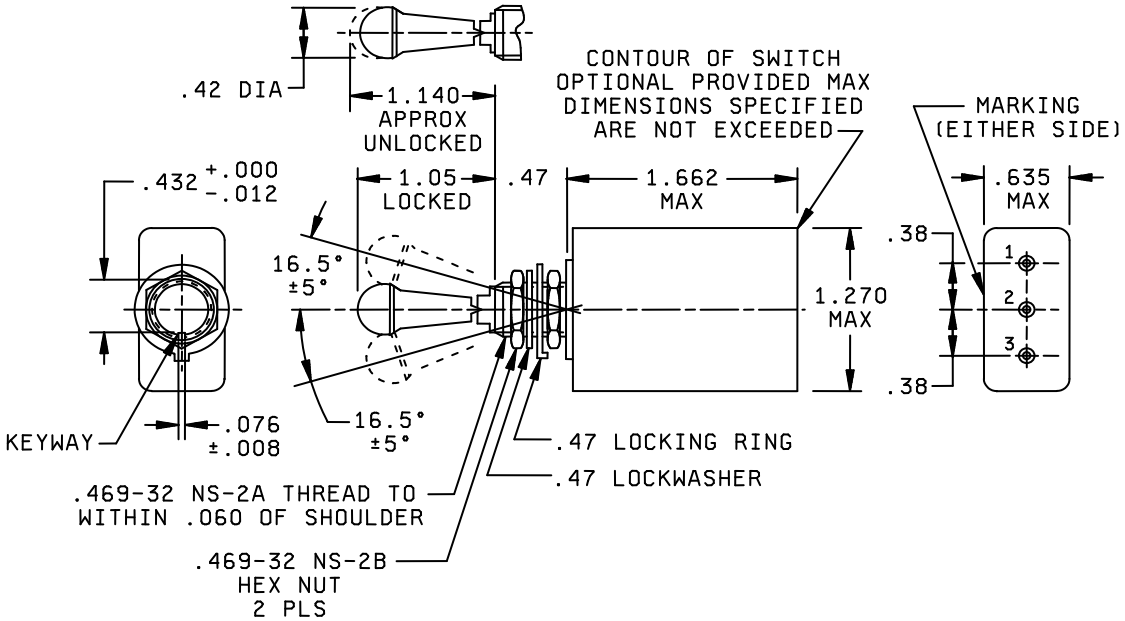

FIGURE1. Dimensions and configuration

Inches	mm	Inches	mm
.005	0.13	.432	10.97
.008	0.20	.469	11.91
.012	0.30	.47	11.9
.020	0.51	.635	16.13
.060	1.52	1.05	26.7
.076	1.93	1.140	28.96
.38	9.7	1.270	32.26
.42	10.7	1.662	42.21

NOTES:

1. Dimensions are inches. Metric equivalents are given for general information only.
2. Unless otherwise specified, tolerance is ± .020 (0.51 mm) for two place decimals and ± .005 (0.13 mm) for three place decimals.
3. For hardware detail specifications see appendix of MIL-DTL-3950.
4. Contact installing/ removal tool in accordance with MIL-I-81969/14-03.
5. Grommet sealing plug, in accordance with MS27488A16.
6. Terminal shall adequately accept a wire contact within dimensional limits of SAE-AS39029/1-102.
7. Direction of internal mechanism movement is opposite to the direction of the toggle movement.

FIGURE1. Dimensions and configuration Continued

REQUIREMENTS

Maximum weight is .108 pound.

The force required to release the locking mechanism shall be 3 to 5 pounds.

Locking arrangement: Positive locking shall be accomplished and shall prevent motion of the toggle movement

The locking means at the top of the toggle bushing shall be capable of withstanding a torque of 20 inch-pounds applied in both directions immediately following the humidity test.

The sealing grommet shall seal on a smooth wire insulation of .068 (1.73 mm) to .103 (2.62 mm) diameters.

The terminal end of switch shall be color coded blue to indicate contact size.

Sealing plugs may be used in nonfunctional grommet holes.

Electrical rating: See table I.

LOCKING COMBINATIONS

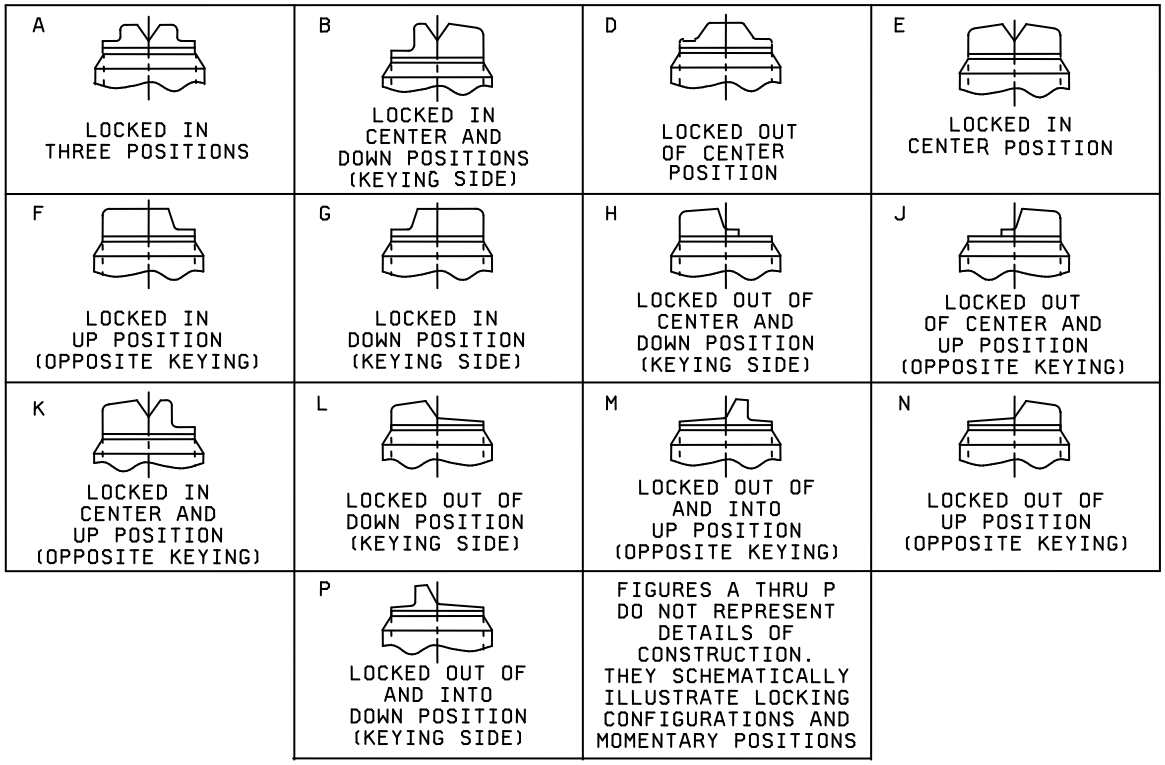

FIGURE 2 . Locking Combinations.

TABLE I: Detail Requirements

MS Part No.	Available Locking combinations	Circuit with Toggle Lever In			Current capacity (amperes) 28 volts DC			Current capacity(amperes) 115 volts, 60 and 400 Hertz AC		
		Keying side	Center	Opposite keying side	Lamp Load circuit	Resistive circuit	Inductive circuit	Lamp-Load circuit	Resistive circuit	Inductive circuit
MS27781-21	ALL	1-2 ON	OFF	2-3 ON	5	20	15	3	15	10
MS27781-22	D, F, G	OFF	NONE	2-3 ON						
MS27781-23	D,F,G	1-2 ON	NONE	2-3 ON						
MS27781-24	E,F,K,M	NONE	OFF	2-3 ON						
MS27781-25	F	NONE	MOM OFF	2-3 ON	4	15	10	2	15	7
MS27781-26	F	1-2 MOM. ON	NONE	2-3 ON						
MS27781-27	E,L,N	1-2 MOM. ON	OFF	2-3 MOM ON						
MS27781-28	E	1-2 MOM ON	OFF	NONE						
MS27781-29	F	MOM OFF	NONE	2-3 ON						
MS27781-30	F	1-2 MOM OFF	NONE	OFF						
MS27781-31	E,F,K,L,M,N	1-2 MOM ON	OFF	2-3 ON						
MS27781-32	E	NONE	ON 1-2	2-3 MOM ON						
MS27781-33	E,F,K,M	NONE	ON 1-2	2-3 ON	5	20	15	3	15	10

Test Requirements

a) During all tests. Switches shall be fully wired with appropriate wire and terminal contacts.
b) Contact voltage drop- the contact drop with two terminals and the switch contact in series shall not exceed 8 millivolts measured from one wire contact through the contacts to the other wire contacts.

Referenced documents
MIL-DTL-3950

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:
Army – CR
Navy – AS
Air Force – 85
DLA – CC

Preparing activity
DLA – CC

(Project 5930-2011-062)

Review activities
Army – AR, AV, MI
Navy – EC, MC
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/ .