

INCH-POUND

MS27787D

18 April 2011

**SUPERSEDING**

MS27787C

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.

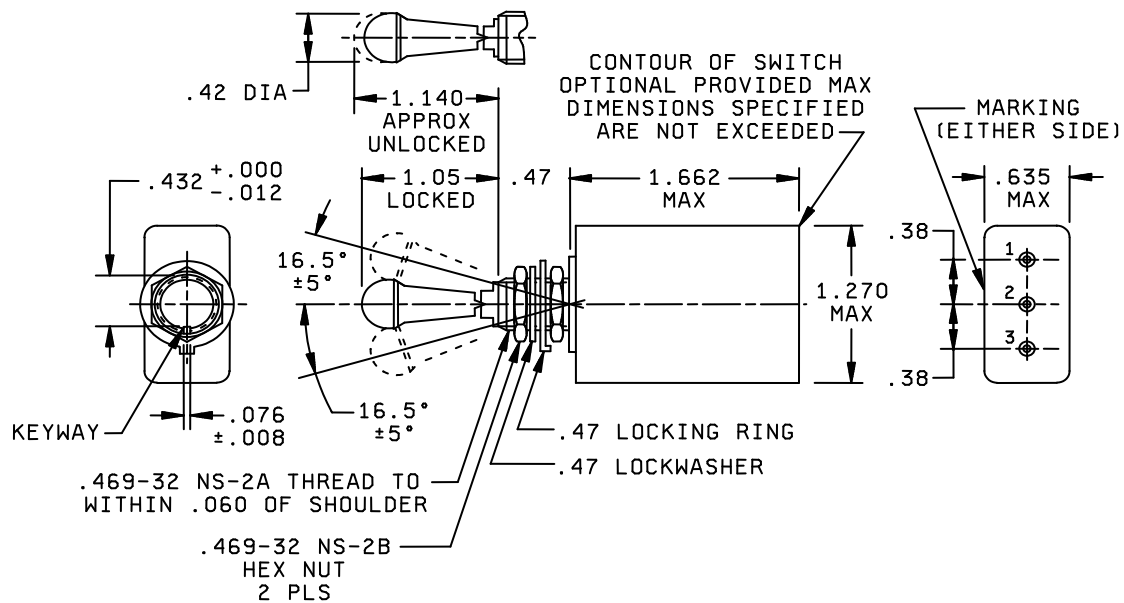
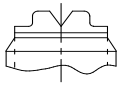
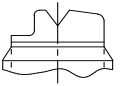
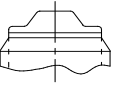
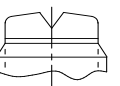
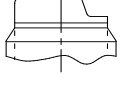
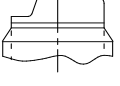


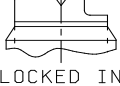


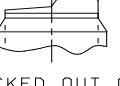



FIGURE1. Dimensions and configuration

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## LOCKING COMBINATIONS

<p>A</p>  <p>LOCKED IN THREE POSITIONS</p>	<p>B</p>  <p>LOCKED IN CENTER AND DOWN POSITIONS (KEYING SIDE)</p>	<p>D</p>  <p>LOCKED OUT OF CENTER POSITION</p>	<p>E</p>  <p>LOCKED IN CENTER POSITION</p>
<p>F</p>  <p>LOCKED IN UP POSITION (OPPOSITE KEYING)</p>	<p>G</p>  <p>LOCKED IN DOWN POSITION (KEYING SIDE)</p>	<p>H</p>  <p>LOCKED OUT OF CENTER AND DOWN POSITION (KEYING SIDE)</p>	<p>J</p>  <p>LOCKED OUT OF CENTER AND UP POSITION (OPPOSITE KEYING)</p>
<p>K</p>  <p>LOCKED IN CENTER AND UP POSITION (OPPOSITE KEYING)</p>	<p>L</p>  <p>LOCKED OUT OF DOWN POSITION (KEYING SIDE)</p>	<p>M</p>  <p>LOCKED OUT OF AND INTO UP POSITION (OPPOSITE KEYING)</p>	<p>N</p>  <p>LOCKED OUT OF UP POSITION (OPPOSITE KEYING)</p>
	<p>P</p>  <p>LOCKED OUT OF AND INTO DOWN POSITION (KEYING SIDE)</p>	<p>FIGURES A THRU P DO NOT REPRESENT DETAILS OF CONSTRUCTION. THEY SCHEMATICALLY ILLUSTRATE LOCKING CONFIGURATIONS AND MOMENTARY POSITIONS</p>	

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  $\pm .020$  (0.51 mm) for two place decimals and  $\pm .005$  (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-81969/14-002.
5. Grommet sealing plug, in accordance with MS27488-A20.
6. Terminal shall adequately accept a wire contact within dimensional limits of SAE-AS39029/1-101.
7. Part number example: MS27787-21A (locking combination 'A').
8. In the event of a conflict between the text of this standard and the reference cited herein, the text of this standard shall take precedence.

FIGURE1. Dimensions and configuration- Continued

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## REQUIREMENTS

The Sealing grommet shall seal on a smooth wire insulation of .040 (1.02 mm) to .083 (2.11mm) diameters

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

Direction of internal mechanism movement is opposite to the direction of the toggle movement

Sealing plugs may be used in nonfunctional grommet holes.

Maximum weight is .108 pound.

Locking arrangement Positive locking shall be accomplished and shall prevent motion of the toggle lever until the locking mechanism is manually released.

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

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

Electrical rating: See table I.

TABLE I: Detail Requirements

MS Part Number	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
MS27787-21	ALL	1-2 ON	OFF	2-3 ON	5	7.5	7.5	3	7.5	7.5
MS27787-22	D,F,G	OFF	NONE	2-3 ON						
MS27787-23	D,F,G	1-2 ON	NONE	2-3 ON						
MS27787-24	E,F,K,M	NONE	OFF	2-3 ON						
MS27787-25	F	NONE	MOM. OFF	2-3 ON	4	7.5	7.5	2	7.5	7.5
MS27787-26	F	1-2 MOM. ON	NONE	2-3 ON						
MS27787-27	E,L,N	1-2 MOM. ON	OFF	2-3 MOM ON						
MS27787-28	E	1-2 MOM. ON	OFF	NONE						
MS27787-29	F	MOM. OFF	NONE	2-3 ON						
MS27787-30	F	1-2 MOM. ON	NONE	OFF						
MS27787-31	E,F,K,L,M,N	1-2 MOM. ON	OFF	2-3 ON						
MS27787-32	E	NONE	ON 1-2	2-3 MOM. ON						
MS27787-33	E,F,K,M	NONE	ON 1-2	2-3 ON	5	7.5	7.5	3	7.5	7.5

## Test Requirements

Test shall be performed in accordance with MIL-DTL-3950 except

- During all tests. Switches shall be fully wired with appropriate wire and terminal contacts.
- 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.

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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 5930-2011-068)

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/> .