

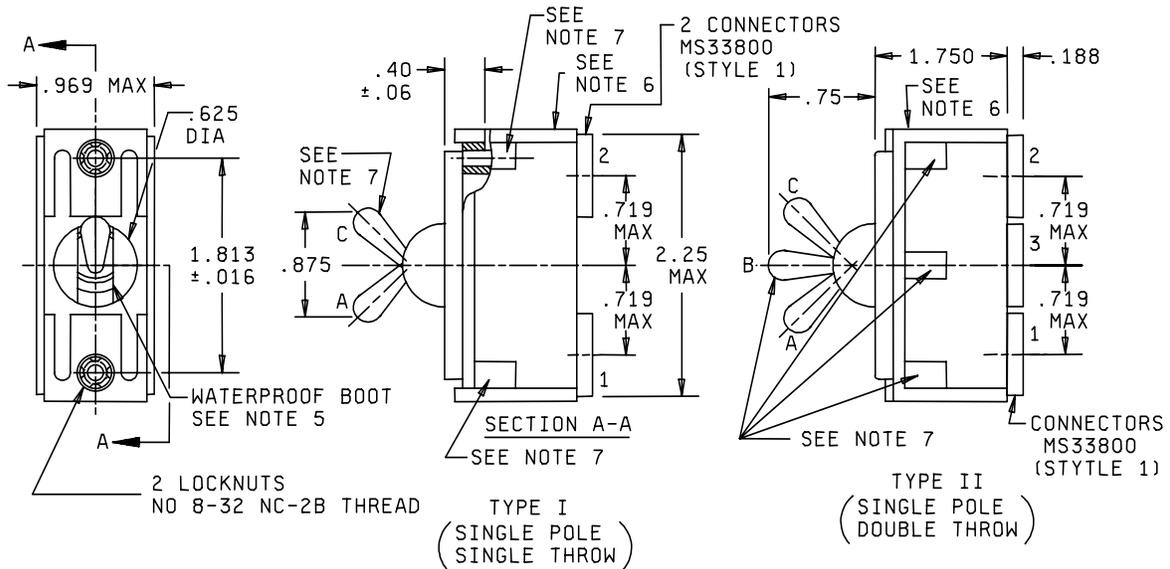
INCH-POUND  
 MS39061D  
 21 December 2004  
 SUPERSEDING  
 MS39061C  
 w/Amendment 2  
 24 March 2004

DETAIL SPECIFICATION SHEET

SWITCH, TOGGLE, SPST, AND SPDT,  
 24 VOLT DC, 25 AMPERE (WATERPROOF)

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-13735.



Configuration A

FIGURE 1. Dimensions and configuration.

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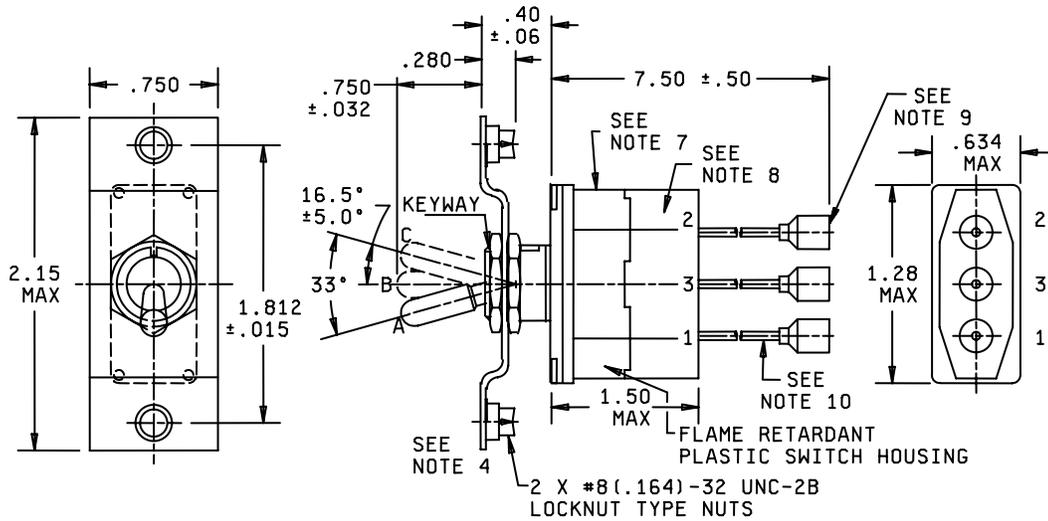
Inches	mm	Inches	mm	Inches	mm	Inches	mm
.016	0.41	.40	10.2	.75	19.1	1.625	41.28
.060	1.52	.625	15.88	.875	22.23	1.813	46.05
.188	4.76	.719	18.26	.969	24.61		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .030$  (0.79 mm) on decimals and  $\pm .5^\circ$  on angles.
4. Switch shall withstand a force of 25 pounds applied .125  $\pm$  .031 inch from the end of the switch lever. and the lever dimensions shall be such as to allow for incorporation of the luminous shown on USAF DWG 43A17587.
5. Waterproof boot for switch lever shall meet the environmental requirements of MIL-DTL-13735.
6. Contour of switch optional provided maximum dimensions specified are not exceeded.
7. Marking shall consist of the PIN and Manufacturers Identification in accordance with MIL-STD-130 and lever position identification in accordance with figure 1, configuration A.

FIGURE 1. Dimensions and configurations - continued.

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Configuration B (Grade 1, Type I and II).

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.015	.381	.28	7.112	.75	19.05	1.812	46.025
.03	.762	.40	10.16	1.28	32.512	2.15	54.61
.032	.813	.50	12.70	1.50	38.10	7.50	190.50
.06	1.524	.634	16.10				

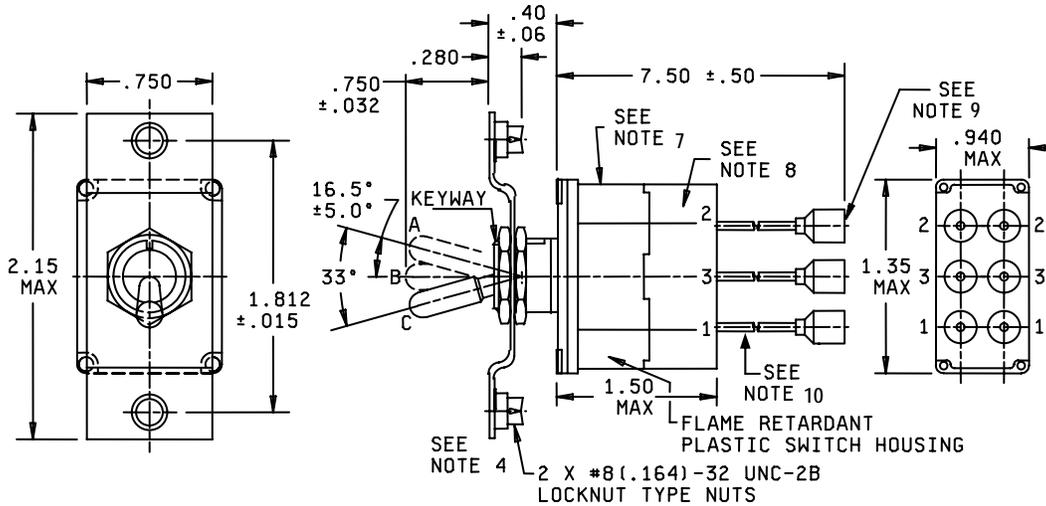
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NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .030$  (0.79 mm) on decimals and  $\pm 10^\circ$  on angles.
4. Mounting plate shall be rigidly and firmly assembled to the switch as shown.
5. Switch shall withstand a force of 25 pounds applied .125  $\pm .031$  inch from the end of the switch lever.
6. The lever dimensions shall be such as to allow for incorporation of the luminous shown on figure 2.
7. Contour of switch optional provided maximum dimensions specified are not exceeded.
8. All exposed switch terminals shall be encapsulated with potting material. Presence of thin traces of potting material on switch base allowed.
9. All wire leads shall be supplied with connectors in accordance with MS27142-2 or equivalent.
10. Lead wires shall be 14 AWG, M13486/1-5 in accordance with MIL-DTL-13486, color black. Each lead wire shall be marked with numerals 1 through 3. Non-functional lead wires shall not be supplied.
11. At minimum, marking shall consist of the PIN and Manufacturers Identification in accordance with MIL-STD-130 and lever position identification in.

FIGURE 1. Dimensions and configurations - Continued.

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Configuration C (Grade 1, Type III and IV).

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.015	.381	.28	7.112	.940	23.88	1.812	46.025
.03	.762	.40	10.16	1.35	34.29	2.15	54.61
.032	.813	.50	12.70	1.50	38.10	7.50	190.50
.06	1.524	.75	19.05				

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .030$  (0.79 mm) on decimals and  $\pm 10^\circ$  on angles.
4. Mounting plate shall be rigidly and firmly assembled to the switch as shown.
5. Switch shall withstand a force of 25 pounds applied .125  $\pm$  .031 inch from the end of the switch lever.
6. The lever dimensions shall be such as to allow for incorporation of the luminous shown on figure 2.
7. Contour of switch optional provided maximum dimensions specified are not exceeded.
8. All exposed switch terminals shall be encapsulated with potting material. Presence of thin traces of potting material on switch base allowed.
9. All wire leads shall be supplied with connectors in accordance with MS27142-2 or equivalent.
10. Lead wires shall be 14 AWG, M13486/1-5 in accordance with MIL-DTL-13486, color black. Each lead wire shall be marked with numerals 1 through 3. Non-functional lead wires shall not be supplied.
11. Marking shall consist of the PIN and Manufacturers Identification in accordance with MIL-STD-130 and lever position identification.

FIGURE 1. Dimensions and configurations - continued.

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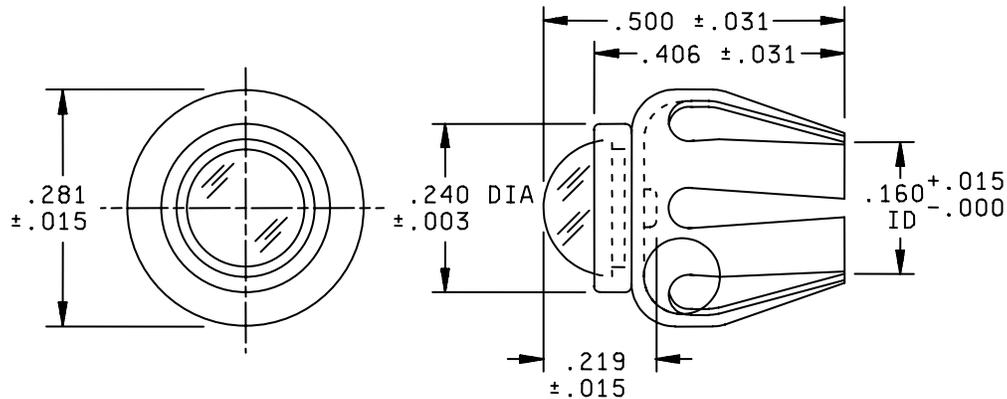


FIGURE 2. Luminous dimensions

REQUIREMENTS:

Dimension and configuration: See figure 1.

Terminals:

Configuration A: MS33800 or equivalent. Wire leads (when applicable), shall be 16 AWG, M13486/1-3 in accordance with MIL-DTL-13486, color black. Each lead wire shall be marked with numerals 1 through 3. Non-functional lead wires shall not be supplied.

Configuration B or C: MS27142-2 or equivalent. Wire leads (when applicable), shall be 14 AWG, M13486/1-5 in accordance with MIL-DTL-13486, color black. Each lead wire shall be marked with numerals 1 through 3. Non-functional lead wires shall not be supplied.

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

Sealing: The switches shall be immersed in an enclosure containing water. The enclosure shall be subjected to a vacuum resulting in an absolute pressure equal to  $2.0 \pm 0.5$  inches of mercury for 5 minutes. The immersed switches shall be observed for leakage as evidenced by a continuous stream of bubbles emanating from the water prior to release of the vacuum.

Electrical ratings: See table I.

Contact voltage drop: Shall not exceed 50 millivolts when tested using load of 100 milliamperes at 2-6 volts dc. Switch contacts shall be actuated 3 times prior to taking the final measurement.

Part or Identifying Number (PIN): See table II.

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TABLE I. Electrical ratings, configurations A, B, and C.

Load	Configuration A	Configuration B	Configuration C
	24 V dc	24 V dc	24 V dc
	(amperes)	(amperes)	(amperes)
Resistive	25	25	25
Inductive	15	15	15
Lamp	6	6	6

TABLE II. Switching characteristics and PIN's for configuration A.

PIN	Former Government Designation	MIL-DTL-13735	Configuration <sup>1/</sup>	Circuit with toggle lever in position			
		Type	Class		A	B Center	C
MS39061-1	8376806	I	B	A or B	On (1-2)	None	Off
MS39061-2	8376807	I	A	A or B	Mom. On (1-2)	None	Off
MS39061-3	8376808	I	AB	A or B	On (1-2)	None	Mom. off
MS39061-4	8376809	II	B	A or B	On (2-3)	Off	On (1-3)
MS39061-5	8376810	I	AB	A or B	On (2-3)	None	Mom. On (1-3)
MS39061-6	8376811	II	AB	A or B	On (2-3)	Off	Mom. On (1-3)
MS39061-7	8376812	I	AB	A or B	On (2-3)	None	On (1-3)
MS39061-8	8376813	II	A	A or B	Mom. On (2-3)	Off	Mom. On (1-3)
MS39061-9	7954899	III	B	C	On (1-3)	None	Off
MS39061-10	7954900	IV	B	C	On (1-3)	Off	On (2-3)
MS39061-11	7954901	IV	AB	C	Mom. On (1-3)	None	On (2-3)
MS39061-12	7954902	IV	AB	C	Mom. On (1-3)	Off	On (2-3)
MS39061-13	7954903	IV	B	C	On (1-3)	None	On (2-3)
MS39061-14	7954904	III	A	C	Mom. On (1-3)	None	Off
MS39061-15	7954905	IV	A	C	Mom. On (1-3)	Off	Mom. On (2-3)
MS39061-16	7954906	III	AB	C	On (1-3)	None	Mom. off

<sup>1/</sup> Configurations A and B are functionally interchangeable.

<sup>2/</sup> Configuration C is functionally interchangeable with multi-pole, grade 1, toggle switches per former Ordnance Corps drawing 7954899 through 7954906.

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

Referenced Documents

MIL-DTL-13486  
MIL-DTL-13486/1  
MIL-DTL-13735  
MIL-STD-130  
MS33800D  
MS27142  
USAF DWG 43A17587

Custodians:

Army - AT  
DLA - CC

Preparing activity:

DLA - CC

(Project 5930-1877)

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 <http://assist.daps.dla.mil/>.