

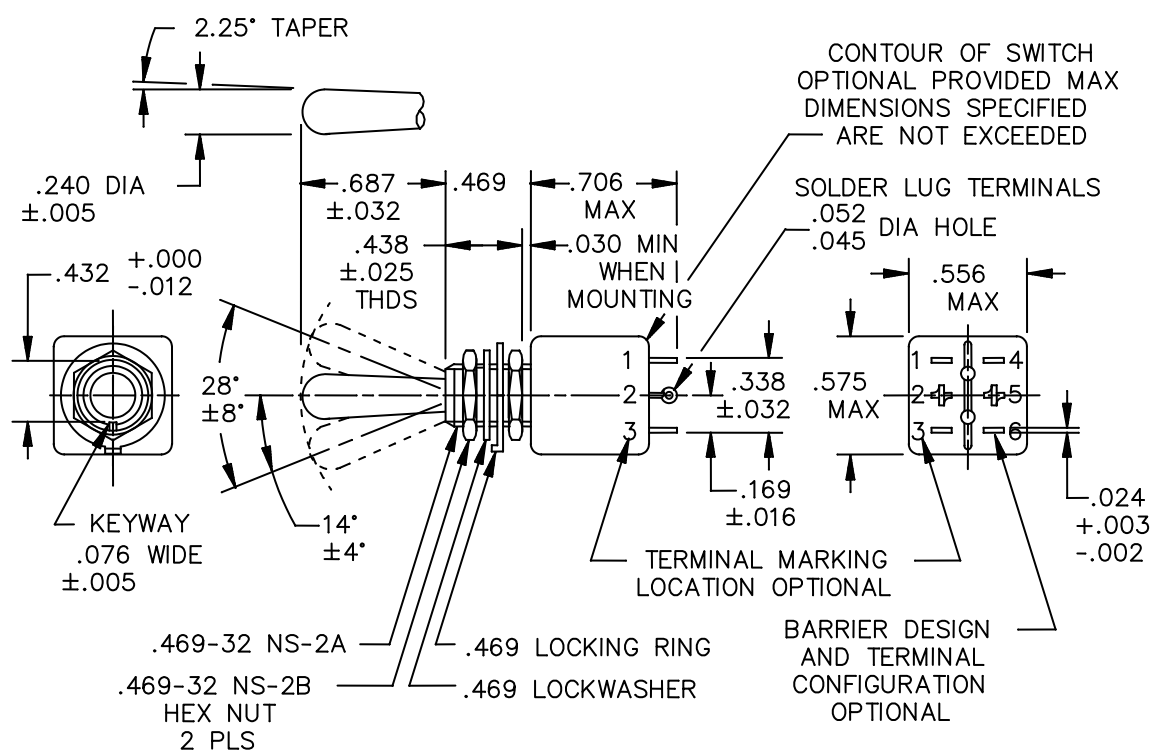
|              |
|--------------|
| INCH POUND   |
| MS90311M     |
| 9 June 2011  |
| SUPERSEDING  |
| MS90311L     |
| 3 March 2011 |

## DETAIL SPECIFICATION SHEET

SWITCH, TOGGLE, POSITIVE BREAK, 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 complete requirements for acquiring the switch described herein shall consist of this specification and the latest issue of MIL-DTL-8834.

FIGURE 1. Dimensions and configuration.

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| Inches | mm   | Inches | mm   | Inches | mm    |
|--------|------|--------|------|--------|-------|
| .002   | 0.05 | .030   | 0.76 | .432   | 10.97 |
| .003   | 0.08 | .032   | 0.81 | .438   | 11.13 |
| .005   | 0.13 | .045   | 1.14 | .469   | 11.91 |
| .010   | 0.25 | .052   | 1.32 | .556   | 14.12 |
| .012   | 0.30 | .072   | 1.83 | .572   | 14.53 |
| .016   | 0.41 | .169   | 4.29 | .687   | 17.45 |
| .024   | 0.61 | .240   | 6.10 | .706   | 17.93 |
| .025   | 0.64 | .338   | 8.59 |        |       |

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents (to the nearest 0.01 mm) are given for general information only.
3. Unless otherwise specified, tolerances are  $\pm 0.010$  (0.25 mm) on decimals and  $\pm 5^\circ$  on angles.
4. For hardware detail specifications, see appendix of MIL-DTL-8834.

FIGURE 1. Dimensions and configuration - Continued.

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## REQUIREMENTS:

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

Maximum weight: .0463 pound (21 grams).

Electrical endurance: 115 VAC, 60Hz electrical endurance tests are to be performed at room temperature and pressure.

Toggle seal test: Method I for series 700 and 800. Method II for series 200 and 300

Shock: Method I 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 (high impact).

Terminal strength: 5 pounds normal to the mounting plane and 2 pounds in other planes.

Altitude: 50,000 feet.

Electrical ratings: See table I.

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

TABLE I. Detail requirements.

| MS dash no.<br><u>1/</u> |                 | Circuit made between terminals as indicated with toggle lever in these positions <u>2/</u> |                 |                   | Current capacity in amperes |           |   |                |           |   | Life low current level switching<br>5 mV |
|--------------------------|-----------------|--|-----------------|-------------------|-----------------------------|-----------|---|----------------|-----------|---|--|
|                          |                 |  |                 |                   | Resistive load              |           |   | Inductive load |           |   |  |
|                          |                 |  |                 |                   | 28<br>V dc                  | 115 volts |   | 28<br>V dc     | 115 volts |   |  |
| 60<br>hertz ac           | 400<br>hertz ac | 60<br>hertz ac   | 400<br>hertz ac |                   |                             |           |   |                |           |   |  |
| -711                     | -211            | On<br>2-3 5-6  | Off             | On<br>1-2 4-5     | 5                           | 2         | 3 | 1<br><u>3/</u> | 1         | 2 | 25 $\mu$ A<br><u>4/</u>                  |
| -721                     | -221            |  | None            | Off               |                             |           |   |                |           |   |  |
| -731                     | -231            |  |                 | On<br>1-2 4-5     |                             |           |   |                |           |   |  |
| -741                     | -241            |  | None            |                   |                             |           |   |                |           |   |  |
| -771                     | -271            | Mom-on<br>2-3 5-6  | Off             | Mom-on<br>1-2 4-5 | 5                           | 2         | 3 | 1<br><u>3/</u> | 1         | 2 | 25 $\mu$ A<br><u>4/</u>                  |
| -781                     | -281            | None   |                 |                   |                             |           |   |                |           |   |  |
| -811                     | -311            | On<br>2-3 5-6  |                 |                   |                             |           |   |                |           |   |  |

1/ 700 and 800 series toggle seal (water) 15 feet head; 200 and 300 series toggle seal (water) 1/2 inch head

2/ Direction of movement of internal mechanism is opposite to the direction of the toggle movement.

3/ With time constant of  $.020 \pm .002$  seconds.

4/ Contact resistance not to exceed 50 ohms during life, low current level switching.

5/ Non-functional terminals shall not be supplied.

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Referenced documents:  
MIL-DTL-8834

The margins of this specification are marked with vertical lines to indicate where modifications from this revisions 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.

Custodians:  
Army - CR  
Navy - AS  
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DLA - CC

Preparing activity:  
DLA - CC  
  
(Project 5930-2011-030)

Review activities:  
Army - AR, AT, AV, MI  
Navy - EC  
Air Force - 99

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