

INCH-POUND  
MIL-S-8805/85E  
21 July 2005  
SUPERSEDING  
MIL-S-8805/85D(USAF)  
21 June 1993

MILITARY SPECIFICATION SHEET

SWITCH, SENSITIVE, ROTARY (NON-SELF RETURN),  
4 AMPERES, RESILIENT SEAL

INACTIVE FOR NEW DESIGN,  
DATED 8 MARCH 1999

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 MIL-PRF-8805.

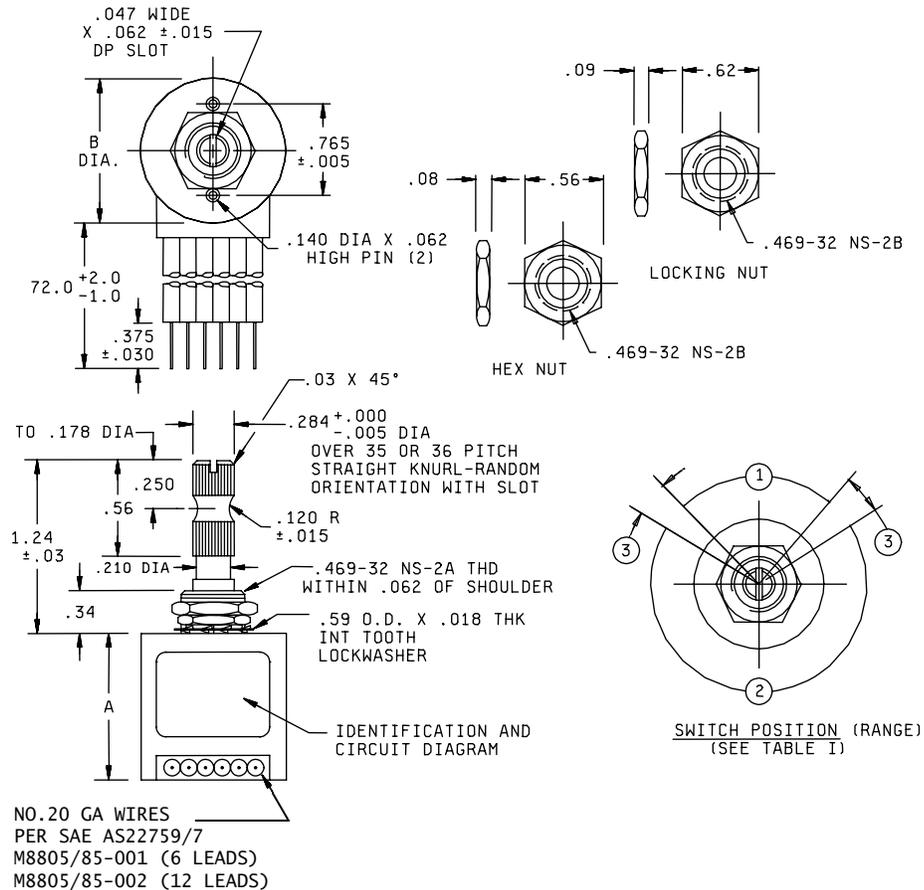


FIGURE 1. Dimensions and configurations.

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PIN	A Max	B Max	Max weight with leads (Pounds)	Operating torque (Inch-pounds)
M8805/85-001	1.03	1.03	.47	1
M8805/85-002	1.30	1.53	.88	3

<u>Inches</u>	<u>mm</u>								
0.005	0.13	0.062	1.57	0.248	6.30	0.620	15.75	2.000	50.80
0.010	0.25	0.080	2.03	0.250	6.35	0.765	19.43	72.000	1828.80
0.018	0.46	0.090	2.29	0.340	8.64	1.000	25.40		
0.030	0.76	0.120	3.05	0.375	9.52	1.240	31.50		
0.047	1.19	0.140	3.56	0.560	14.22	1.300	33.02		
0.050	1.27	0.178	4.52	0.590	14.99	1.530	38.86		

NOTES:

1. Dimensions are in inches. Metric equivalents are given for general information only.
2. Unless otherwise specified, tolerances are  $\pm 0.03$  (0.76 mm) for one place decimals,  $\pm 0.015$  (0.38 mm) for two place decimals, and  $\pm 0.010$  (0.25 mm) for three place decimals.
3. Configuration optional provided specified dimensions are not exceeded.
4. Lead wire shall be marked at intervals of 3.5 inches (88.9 mm) maximum with switch circuit identification number followed by wire gauge number (1-20). The marking shall be legible, permanent, and shall not impair the wire characteristics.

FIGURE 1. Dimensions and configurations - Continued.

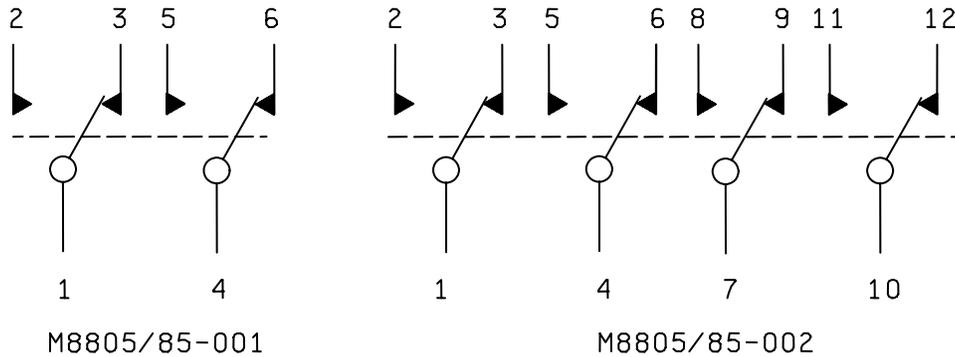


FIGURE 2. Circuit diagram.

REQUIREMENTS:

Dimensions and configuration: See figures 1 and 2.

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Enclosure design: 4 (resilient). All entrances to the switch cavity except through the actuator bushing shall be sealed by fusion of glass to metal, metal to metal, or ceramic to metal and the lead wires shall be potted to provide stress relief.

Temperature characteristics: 1 (-55°C to +85°C).

Shock: 75 g's in accordance with MIL-STD-202; method 213, test condition H.

Vibration grade: 1 (10 to 500 Hz).

Material:

Lock washer: Corrosion-resistant steel or plated to resist corrosion.

Hex nut and locking nut: Corrosion resistant or plated to resist corrosion.

Plastic: Type CFG, in accordance with ASTM-D548, may be used internally.

Finish: Switch housing shall be processed to resist corrosion.

Operating characteristics: See table I.

Fluid resistance: Except for the cut end of the lead wire, switches shall be submerged in each of the following fluids for 2 to 2.5 minutes, which shall consist of one cycle (one cycle is 10 to 12.5 minutes total). Each switch shall be subjected to three cycles.

- a. Turbine fuel (MIL-DTL-5624).
- b. Hydraulic fluid (SAE AS1241A).
- c. Coolanol 1/ (MIL-PRF-87252).
- d. Ethylene glycol (ASTM -E1119).
- e. Lubricating oil (MIL-PRF-7808).

After each immersion, the excess fluid shall be blown off the external surfaces of the switch with an air jet. Following the third cycle, the switch shall be subjected to and shall meet the requirements for dielectric withstanding voltage, insulation resistance, operating characteristics, and seal test.

Contact resistance: Not applicable.

Insulation resistance: 100 megohms minimum.

Dielectric withstanding voltage:

Sea level: 1,000 V rms.

Altitude: 300 V rms.

Mechanical endurance: 25,000 cycles.

Electrical endurance: 25,000 cycles.

1/ Monsanto Company registered trademark.  
Qualification: See table III.

Electrical ratings: See table II.

Part or Identifying Number (PIN). See figure 1.

Group A inspection: For seal testing, only the watertight test shall be performed.

TABLE I. Operating characteristics.

Operating characteristics <u>1/</u>			
Range (see figure 1)		M8805/85-001	M8805/85-002
1	Free position area circuits made	90° ±15° 1-3 and 4-6	90° ±15° 1-3, 4-6, 7-9 and 10-12
2	Reference circuits made	250° 1-2 and 4-5	250° 1-2, 4-5, 7-8, and 10-11
3	Differential travel	10° maximum	10° maximum
N/A	Simultaneity	2° maximum make of 1-3 and 4-6 only	2° maximum make of 1-3, 4-6, 7-9 and 10-12 only

1/ Coincidence of operating and release point not applicable.

TABLE II. Electrical ratings.

Load	28 V dc	
	Sea level	100,000 feet
	Amperes	Amperes
Resistive	4	4
Inductive	3	1
Motor	4	4
Lamp	2.4	2.4

TABLE III. Qualification group submission.

Examination or test	Basic switch	Other switch samples	Extent of approval
Qualification inspection table of MIL-PRF-8805	M8805/85-002	M8805/85-001 - 2 sample units, visual and mechanical examinations, operating characteristics	All

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

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Referenced Documents: In addition to MIL-PRF-8805, this document references the following:

MIL-DTL-5624  
MIL-PRF-7808  
MIL-PRF-87252  
MIL-STD-202

SAE AS1241A  
SAE AS22759/7  
ASTM-D548  
ASTM-E1119

Custodian:  
Navy - EC  
Air Force - 11

Preparing activity:  
DLA-CC

(Project 5930-1919-003)

NOTE: The activities listed above were interested in this document as of the date of the 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>.