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INCH-POUND

MIL-PRF-8805/43H
 3 September 1999
 SUPERSEDING
 MIL-S-8805/43G
 3 December 1990

PERFORMANCE SPECIFICATION SHEET

SWITCHES, SENSITIVE, PLUNGER, RESILIENT SEAL, FLUID RESISTANT

This specification forms a part of MIL-PRF-8805, dated 23 January 1998, and 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 and MIL-PRF-8805.

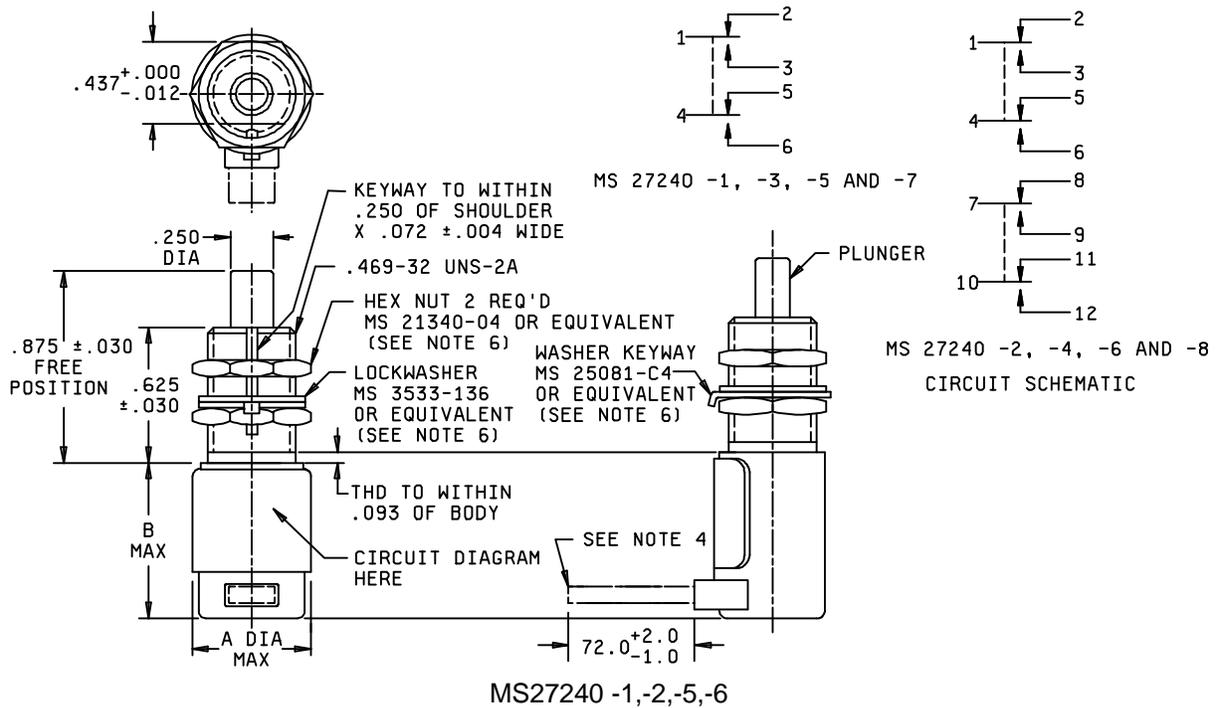
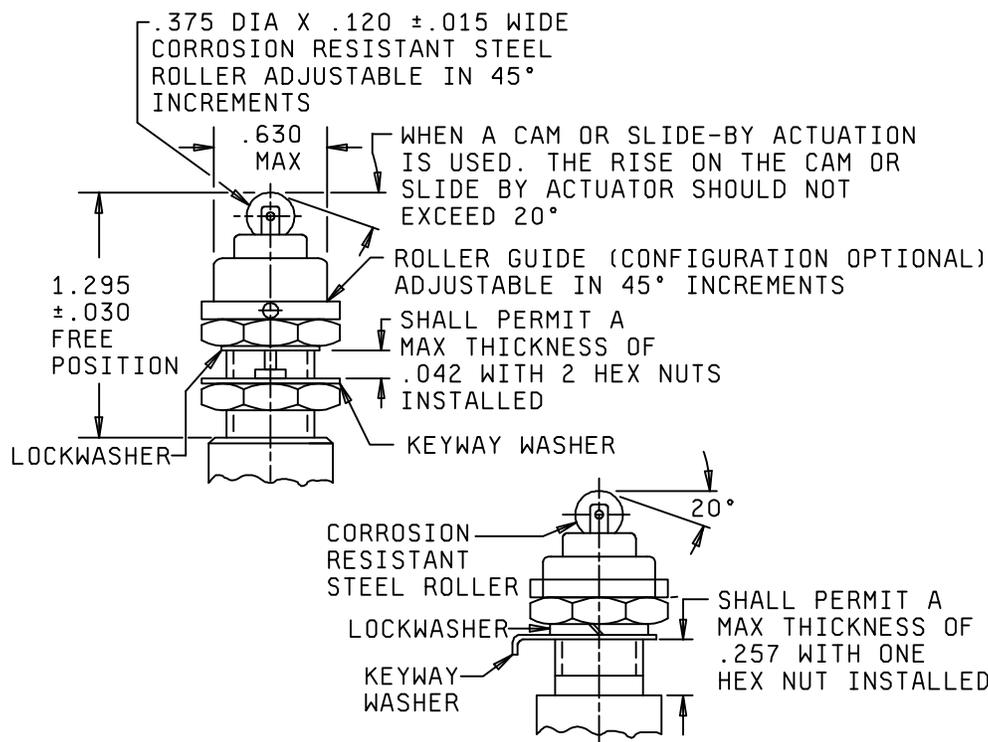


FIGURE 1. Dimensions and configurations.

MIL-PRF-8805/43H



Inches	mm	Inches	mm
.003	0.08	.375	9.53
.004	0.10	.437	11.10
.012	0.30	.469	11.91
.015	0.38	.625	15.88
.030	0.76	.630	16.00
.031	0.79	.680	17.27
.042	1.06	.876	22.23
.072	1.83	1.0	25.
.093	2.36	1.295	32.89
.120	3.05	2.0	50.
.250	6.35	72.0	1828.
.257	6.53		

NOTES:

1. Dimensions are in inches.
2. Unless otherwise stated, tolerance is ±.005 (0.13 mm).
3. Exact shape of switch optional provided dimensions specified are not exceeded.
4. Lead shall be marked in with the switch circuit identification number followed by wire gauge number (1-20, 2-20, etc.) Leads may be stripped .50 maximum for the purpose of inspection of electrical parameters. Leads shall be potted to provide stress relief.
5. Metric equivalents are given for general information only. Alternative base metals and protective finishes, as approved by the qualifying activity, may be utilized for hexagon nut, lock washer and keyway washer material. Dimensions shall be in accordance with the referenced hardware specifications.
6. Alternative base metals and protective finishes, as approved by the qualifying activity, may be utilized for hardware material.

FIGURE 1. Dimensions and Configurations - Continued.

MIL-PRF-8805/43H

REQUIREMENTS:

Dimensions and configurations: See figure 1 and table I.

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 characteristic: 1 (-55°C to +85°C).

Shock type: M (100 g's).

Sinusoidal vibration grade: 2 (10 to 2,000 Hz).

Finish: Switch housing shall be processed to resist corrosion.

Maximum weight with leads:

Two pole: .50 pound.

Four pole: .85 pound.

Operating characteristics: ± 20 percent variation from specified values acceptable after test.

Actuating force: 9 ± 3 pounds.

Release force: 4 pounds minimum.

Movement differential: .020 inch (0.50 mm) maximum.

Pretravel: .040 inch (1.01 mm) maximum.

Overtravel: .125 inch (3.17 mm) minimum.

Full overtravel force: 30 pounds maximum.

Coincidence of operating and releasing points: All poles shall transfer within .010 inch of plunger travel.

Strength of actuating means: 30 pounds.

Contact resistance:

Silver contact switches: Not applicable.

Gold contact switches: In accordance with MIL-PRF-8805, plus .015 ohm maximum per lead per foot.

Dielectric withstanding voltage:

At atmospheric pressure: 1,000 V rms.

At reduced barometric pressure: 50,000 feet; 400 V rms.

Mechanical endurance: 25,000 cycles.

Electrical endurance: 25,000 cycles.

Electrical ratings: See table II and table III.

Low level circuit: Applicable for gold contact switches only, MS27240-5 through MS27240-8: 25,000 cycles.

Logic level circuit: Applicable for gold contact switches only, MS27240-5 through MS27240-8: 25,000 cycles.

MIL-PRF-8805/43H

Fluid resistance: Except for the cut end of the lead wire, switches shall be submerged in each of the following fluids for 2 minutes to 2 minutes 30 seconds, which shall consist of one cycle (one cycle is 10 minutes to 12 minutes 30 seconds total). Each switch shall be subjected to three cycles.

- a. Turbine fuel (MIL-DTL-5624).
- b. Hydraulic fluid (SAE AS1241A).
- c. Coolanol 1/(FSN 9150-551-4022).
- d. Ethylene glycol (ASTM E-1119-92).
- 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, seal tests, and marking visibility.

Marking: The circuit schematic shall be marked on the switch case.

PIN: See table I.

Qualification inspection:

Group submission: See table III.

Group A inspection:

Seal test: Only watertight test shall be performed.

TABLE I. Part number and characteristics.

PIN	Diameter maximum		Actuator	Lead wires, number required
	A	B		
MS27240-1	.720 (18.29)	1.000 (25.40)	Plunger	6
MS27240-2	1.031 (26.19)	1.200 (30.48)	Plunger	12
MS27240-3	.720 (18.29)	1.000 (25.40)	Roller Plunger	6
MS27240-4	1.031 (26.19)	1.200 (30.48)	Roller Plunger	12
MS27240-5	.720 (18.29)	1.000 (25.40)	Plunger	6
MS27240-6	1.031 (26.19)	1.200 (30.48)	Plunger	12
MS27240-7	.720 (18.29)	1.000 (25.40)	Roller Plunger	6
MS27240-8	1.031 (26.19)	1.200 (30.48)	Roller Plunger	12

1/ Monsanto Company registered trademark.

MIL-PRF-8805/43H

TABLE II. Electrical ratings, MS27240-1,-2,-3,-4.

Load	Sea level 28 V dc	50,000 feet 28 V dc
	(amperes)	(amperes)
Resistive	7	7
Inductive	4	2.5
Motor	4	4 <u>1/</u>

1/ Application information only.

TABLE III. Electrical ratings, MS27240-5,-6,-7,-8.

Load	Sea level (amperes)			50,000 feet (amperes)	
	Power circuit 28 V dc	Electronic logic 5 V dc	Low level 30 mV dc or peak ac	Power circuit 28 V dc	Electronic logic 5 V dc
Resistive	1.0	0.01	0.01	1.0	0.01
Inductive	0.5	---	---	0.5	---

TABLE IV. Qualification inspection (group submission).

Examination or test	Samples	Extent of Approval
Qualification inspection table of MIL-PRF-8805	MS27240-4 (24 units)	All
Groups I, VII, X, and XI of qualification inspection table of MIL-PRF-8805 <u>1/</u>	MS27240-8 (8 units)	
Visual and mechanical examination Operating characteristics	MS27240-1, MS27240-2 MS27240-3 (2 units each)	

1/ Logic level circuit: Test sea level ratings only. Electrical endurance (power circuit):
Test altitude ratings only.

NOTE: Part number MS24331-5, covered by MIL-PRF-8805/40A, is canceled. For future procurement use part number MS24331-1.

Custodians:

Air Force - 11
Army - CR
DLA - CC
Navy - EC

Preparing activity:
DLA - CC

(Project 5930-1691-018)

Review activities:

Air Force - 19, 99
Army - AR, AV, MI
Navy - AS, MC