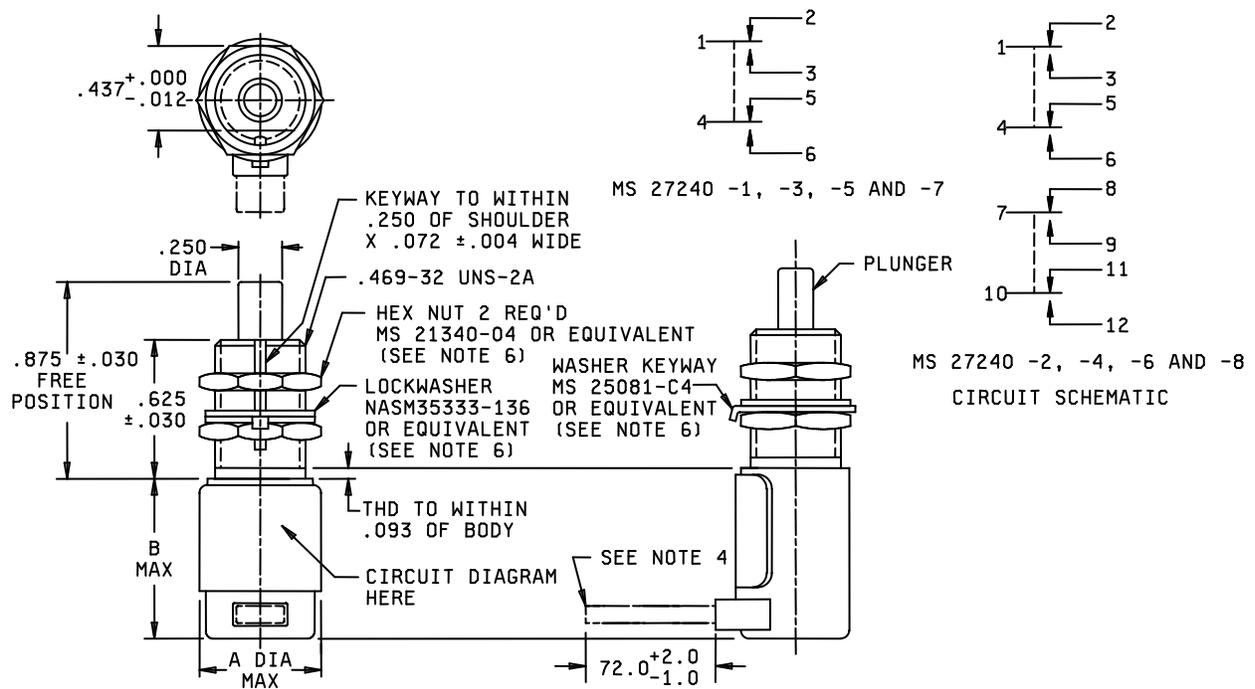


INCH-POUND
MIL-PRF-8805/43K
1 July 2014
SUPERSEDING
MIL-PRF-8805/43J
21 January 2005

PERFORMANCE SPECIFICATION SHEET
SWITCHES, SENSITIVE, PLUNGER, RESILIENT SEAL, FLUID RESISTANT

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-PRF-8805.

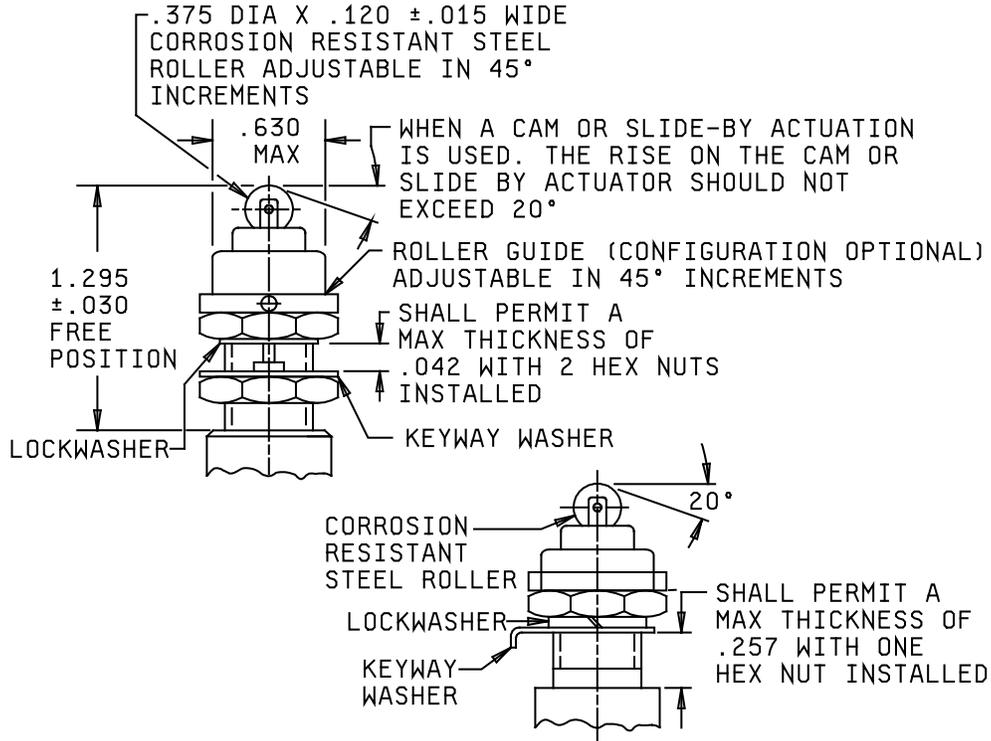


MS27240 -1,-2,-5,-6

NOTE: MS27240 was superseded by MIL-PRF-8805/43, the MS27240 Part Numbers (PINS) were retained.

FIGURE 1. Dimensions and configurations.

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

NOTES:

1. Dimensions are in inches.
2. Unless otherwise stated, tolerance is ±.005 (0.13mm).
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.

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, ceramic-to-metal, or other materials that enable the switch to meet the performance requirements of this specification. 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.

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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/(NSN 9160-00-257-1298).
- d. Ethylene glycol (ASTM E-1119).
- 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

NOTE: MS27240 was superseded by MIL-PRF-8805/43, the MS27240 Part Numbers (PINS) were retained.

1/ Monsanto Company registered trademark.

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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.

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Referenced Documents:

MIL-DTL-5624
MIL-PRF-7808
MIL-PRF-8805
MS25081
ASTM-E119
NASM35333
SAE-AS1241

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where modifications from this revision 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:

Air Force - 85
Army - CR
DLA - CC
Navy - EC

Preparing activity:
DLA - CC

(Project 5930-2013-022)

Review activities:

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

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.dla.mil/>.