

PERFORMANCE SPECIFICATION SHEET

SWITCHES, SENSITIVE, LIMIT, ROTARY LINKAGE LEVER (NONSELF-RETURN), RESILIENT SEAL, FLUID RESISTANT

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](#).

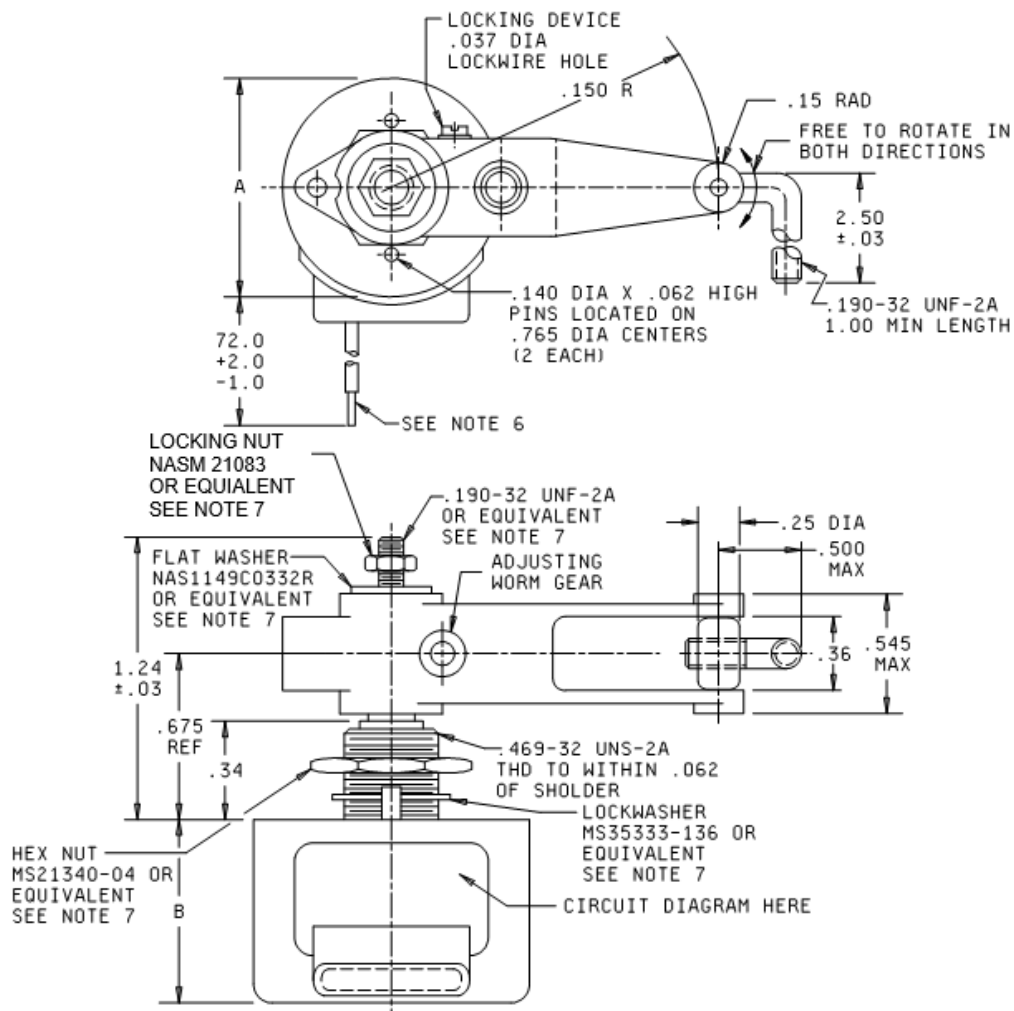
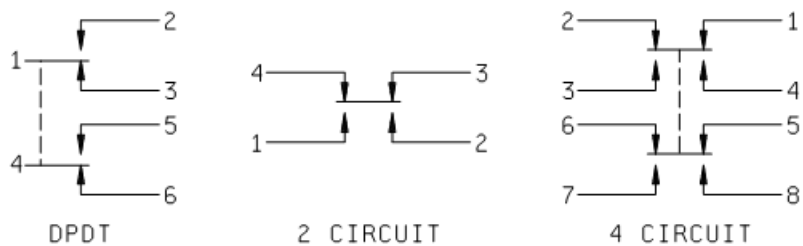
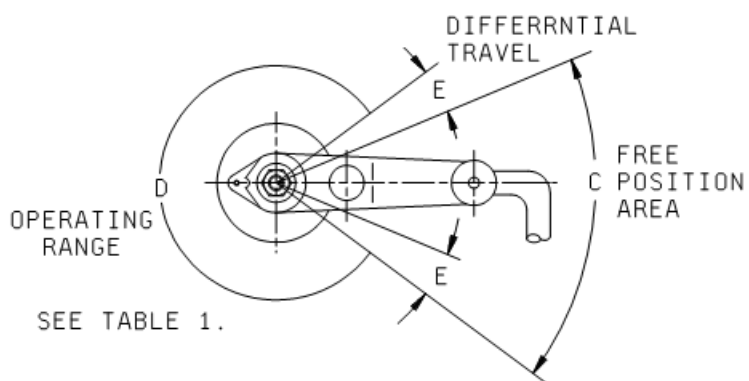


FIGURE 1. Configuration and dimensions.





CIRCUIT SCHEMATIC



NOTES:

1. Dimensions are in inches.
2. MS21340-04 per [MS21340](#). MS35333-136 per [NASM 35333](#). NAS1149C0332R per [NAS1149](#)
3. Unless otherwise specified, tolerances are ± 0.02 for two place decimals and ± 0.005 for three place decimals.
4. Lever shall be adjustable for an infinite number of positions through 360° without removing lever.
6. Envelope optional provided dimensions specified are not exceeded.
7. Alternative base metals and protective finishes, as approved by the qualifying activity, may be utilized for locking nut, flat washer, hexagon mounting nut and lock washer. Dimensions shall be in accordance with the referenced hardware specifications.

FIGURE 1. Configuration and dimensions - Continued.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and table I.

TABLE I. Dimensions and operating characteristics.

Dash numbers	Maximum dimensions		Wire leads		Operating characteristics ^{1/}					
	A	B	Wire size	Number required	C		D		E	Maximum operating torque inch-pounds
					Free position area	Circuits made	Operating range	Circuits made	Maximum differential travel	
MS24420-										
1	1.030	1.050	20			1-3 and 4-6	301° REF	1-2 and 4-5	12°	3
2	1.530	1.680	18	6	35° ±15°	3 and 4	285° REF	1 and 2	20°	5
3		1.430		4						
4				8		1-2 and 6-5		3-4 and 7-8		10
5		1.820	20							

^{1/} ±20 percent variation from specified values acceptable after tests.

Enclosure design: Four (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).

Sinusoidal vibration grade: 1 (10 to 500 Hz).

Finish: Switch housing shall be processed to resist corrosion.

Maximum weight with leads:

MS24420-1: .52 pound.

MS24420-2: .75 pound.

MS24420-3: .61 pound.

MS24420-4, -5: 1.10 pounds.

NOTE: MS24420 was superseded by MIL-PRF-8805/49; the MS24420 Part Numbers (PINS) were retained.

Operating characteristics: See table 1.

Coincidence of operating and releasing point: Not applicable.

Contact resistance: Not applicable.

Insulation resistance: 100 megohms minimum.

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.

TABLE II. Electrical ratings.

Rating code	Load							
	Sea level - 28 V dc				50,000 feet - 28 V dc			
	Resistive (amps)	Inductive (amps)	Lamp (amps)	Motor (amps)	Resistive (amps)	Inductive (amps)	Lamp (amps)	Motor ^{1/} (amps)
A	4	3	2.4	4	4	1	2.4	4
B	10	6	3.6	6	10	3	3.6	6
C	15	10	3.0	5	15	10	3.0	5

^{1/} Application information only.

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 AS1241](#)).
- 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, seal tests, and marking visibility.

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

^{1/} Monsanto Company registered trademark.

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

TABLE III. PIN and characteristics.

PIN	Electrical rating code (table II)	Circuit
MS24420-1	A	DPDT
MS24420-2	B	DPDT
MS24420-3	C	2 circuit
MS24420-4	C	4 circuit
MS24420-5	B	4 circuit

NOTE: MS24420 was superseded by MIL-PRF-8805/49; the MS24420 Part Numbers (PINS) were retained.

Qualification inspection:

Group submission: See table IV.

Group A inspection:

Seal test: Only watertight test shall be performed.

TABLE IV. Qualification inspection (group submission).

Examinations or test	Samples	Extent of approval
Qualification inspection table of MIL-PRF-8805	MS24420-4 (28 units)	All
Visual and mechanical examination, group II	MS24420-1, -3 (2 units each)	
Group VII	MS24420-1, -2 (14 units each)	

Reference Documents:

[MIL-PRF-8805](#)
[MIL-PRF-87252](#)
[NAS1149](#)
[SAE-AS1241](#)

[MIL-DTL-5624](#)
[MS21340](#)
[NASM 21083](#)

[MIL-PRF-7808](#)
[ASTM –E1119](#)
[NASM 35333](#)

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue 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 and relationship to the previous issue.

Custodians:

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

Preparing activity:
DLA - CC

(Project 5930-2023-033)

Review activities:

Army - AR, AV, MI
Navy - AS, MC, OS

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/>.