

INCH-POUND

  
MIL-PRF-8805/49G  
3 September 1999  


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SUPERSEDING  
MIL-S-8805/49F  
3 December 1990

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.

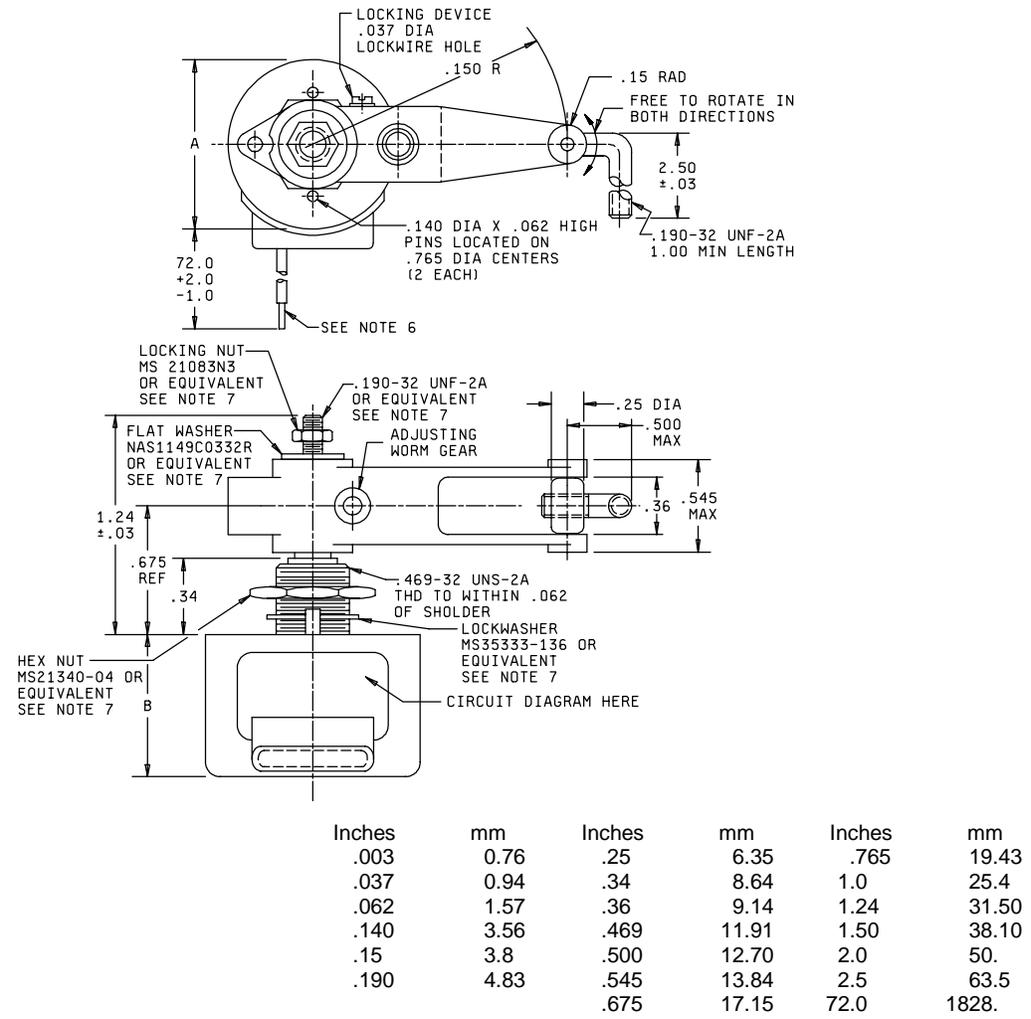
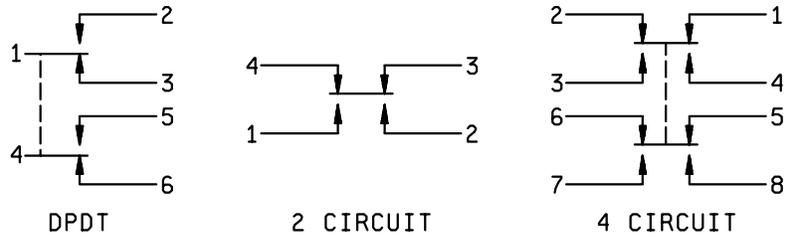
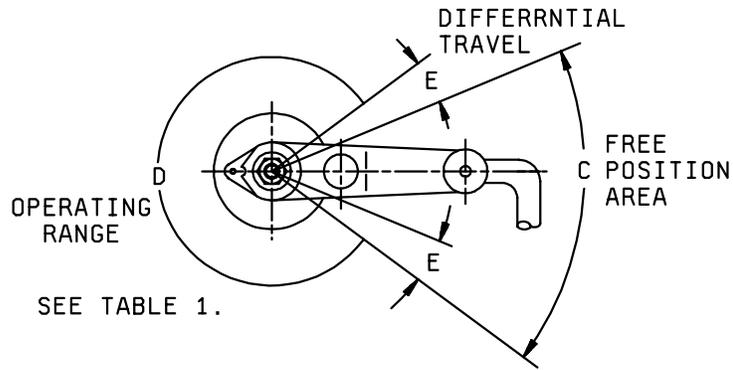


FIGURE 1. Configuration and dimensions.



CIRCUIT SCHEMATIC



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are  $\pm 0.02$  (0.51 mm) for two place decimals and  $\pm 0.005$  (0.13 mm) for three place decimals.
4. Lever shall be adjustable for an infinite number of positions through  $360^\circ$  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.

S24420-	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	D Operating range	Circuits made	Maximum differential travel			
1	1.030 (26.16)	1.050 (26.67)	20	6	35° ±15°	1-3 and 4-6	301° REF	1-2 and 4-5	12°	3		
2	1.530 (38.86)	1.680 (42.67)	18	4		3 and 4	285° REF	1 and 2	20°	5		
3		1.430 (36.32)				20		8		1-2 and 6-5	3-4 and 7-8	10
4		1.820 (46.23)										
5												

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.

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	Inductive	Lamp	Motor	Resistive	Inductive	Lamp	Motor <sup>1/</sup>
	(amperes)	(amperes)	(amperes)	(amperes)	(amperes)	(amperes)	(amperes)	(amperes)
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

<sup>1/</sup> 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-T-5624).
- b. Hydraulic fluid (SAE AS1241A).
- c. Coolanol <sup>1/</sup> (MIL-C-47220).
- d. Ethylene glycol (MIL-E-9500).
- e. Lubricating oil (MIL-L-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.

<sup>1/</sup> 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

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)	

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

Custodians:

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

Preparing activity:

DLA - CC

(Project 5930-1691-021)

Review activities:

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