

INCH-POUND

MIL-PRF-8805/48K

4 July 2024

SUPERSEDING

MIL-PRF-8805/48J

17 August 2018

PERFORMANCE SPECIFICATION SHEET

SWITCHES, SENSITIVE, LIMIT, ROLLER LEVER, SELF-RETURN, 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 switches described herein shall consist of this specification and the latest issue of [MIL-PRF-8805](#).

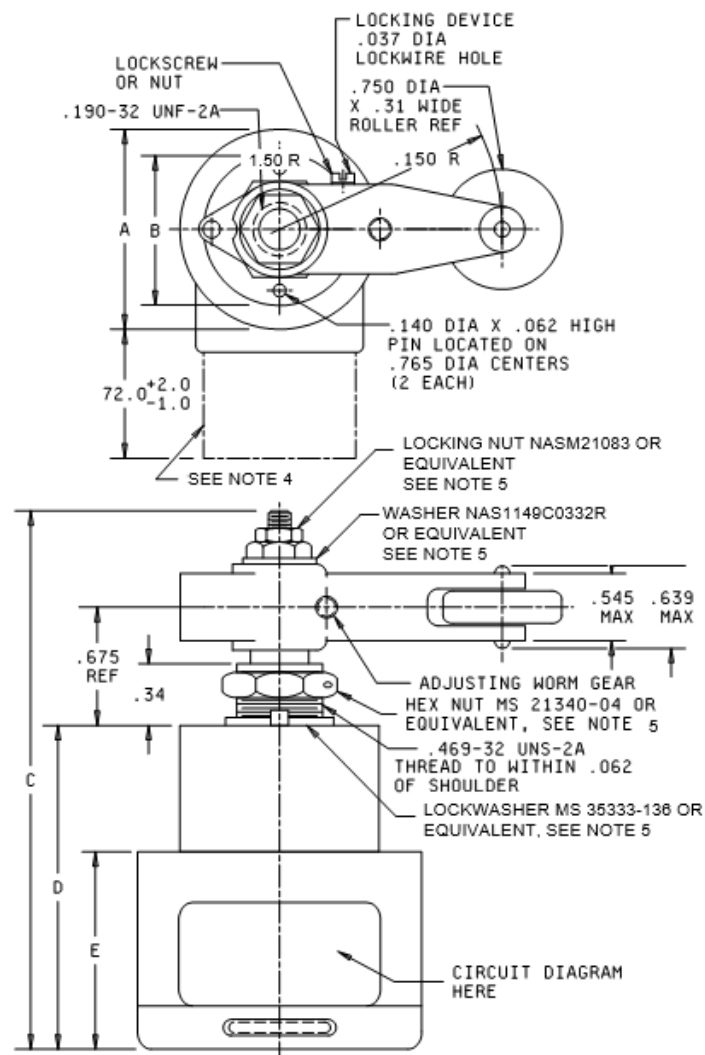
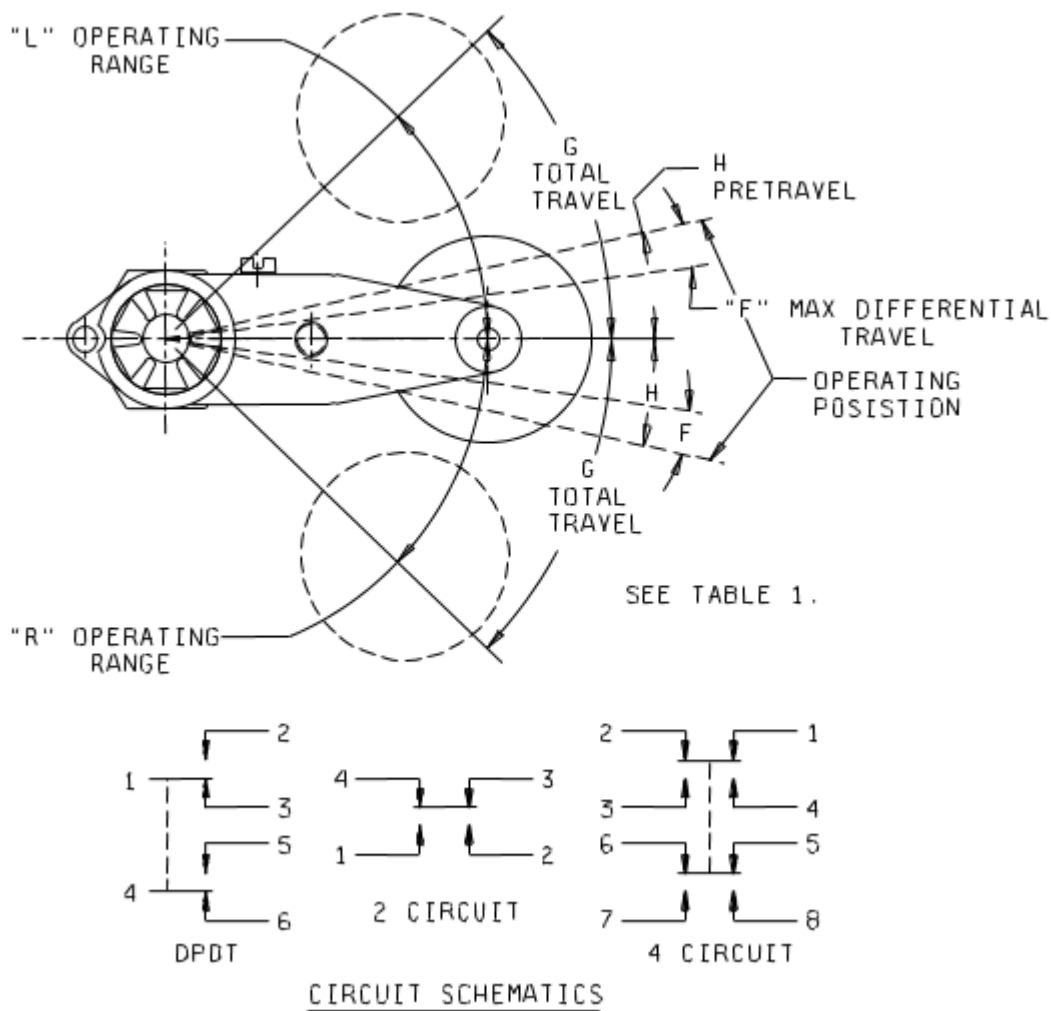


FIGURE 1. Configuration and dimensions.



NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerances are ± 0.02 for two place decimals and ± 0.005 for three place decimals.
3. Envelope optional provided dimensions specified are not exceeded.
4. Lever shall be adjustable for an infinite number of positions through 360° without removing lever.
5. Alternate base metals and protective finishes, as approved by the qualifying activity, may be utilized for lock washer, flat washer, locking nut and hex nut material. Dimensions shall be in accordance with the referenced hardware specification.
6. MS21340-04 per [MS21340](#). MS35333-136 per [NASM35333](#). NAS1149C0332R per [NAS1149](#).

FIGURE 1. Configuration and dimensions - Continued.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and table I.

TABLE I. Dimensions and operating characteristics.

MS21320	Operating range	A diameter max.	B diameter max.	C Max.	D Max.	E Max.	F Max.	G $\pm 3^\circ$	H	Lead Wires	
										Size	Number req.
1	R	1.030	1.030	3.41	2.16	---	4°	45°	13° $\pm 3^\circ$	Number 20	6
2	L										
3	R	1.530		4.10	2.82	1.86	10°		20° $\pm 4^\circ$	Number 18	
4	L										
5	R			3.68	2.44	1.46	5°		15° $\pm 4^\circ$		
6	L										
7	R			4.10	2.82	1.86	10°		15° $\pm 5^\circ$		
8	L										

NOTE: MS21320 was superseded by MIL-PRF-8805/48; the MS21320 Part Numbers (PINS) were retained.

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 Hz to 500 Hz).

Finish: Switch housing shall be processed to resist corrosion.

Maximum weight with leads:

MS21320-1, -2: 9.5 ounces.

MS21320-3, -4: 15.5 ounces.

MS21320-5, -6: 9.5 ounces.

MS21320-7, -8: 15.5 ounces.

Operating characteristics:

Operating torque: 12 to 25 inch-pounds.

Release torque:

MS21320-1, -2: 9 inch-pounds minimum.

MS21320-3, -4: 4 inch-pounds minimum.

MS21320-5, -6, -7, 8: 8 inch-pounds minimum.

Full overtravel torque: 40 inch-pounds maximum.

Coincidence of operating and releasing points: Not applicable.

Contact resistance: Not applicable.

Insulation resistance: 100 megohms minimum.

± 10 percent variation from specified values acceptable after test.

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.

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.

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

^{1/} Monsanto Company registered trademark.

TABLE II. Electrical ratings.

Rating code	Load				
	Sea level 28 V dc			50,000 ft 28 V dc	
	Resistive (amperes)	Inductive (amperes)	Motor (amperes)	Resistive (amperes)	Inductive (amperes)
A	5	3	4	5	2
B	10	6	6	10	3
C	15	10	5	15	10

TABLE III. PIN and characteristics.

PIN	Electrical rating code (table II)	Circuit
MS21320-1	A	DPDT
MS21320-2	A	DPDT
MS21320-3	B	DPDT
MS21320-4	B	DPDT
MS21320-5	C	2 circuit
MS21320-6	C	2 circuit
MS21320-7	C	4 circuit
MS21320-8	C	4 circuit

NOTE: MS21320 was superseded by MIL-PRF-8805/48; the MS21320 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).

Examination or test	Samples	Extent of approval
Qualification inspection table of MIL-PRF-8805	MS21320-7 or-8 (24 units)	All
Visual and mechanical examination, group II	MS21320-1, -3 or MS21320-2, -4 (2 units each)	
Group VII	MS21320-1, -3 or MS21320-2, -4 (10 units each)	

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.

Referenced Documents:

MIL-DTL-5624	NAS1149
MIL-PRF-8805	NASM21083
MIL-PRF-7808	NASM35333
MIL-PRF-87252	ASTM-E1119
MS21340	SAE-AS1241

Custodians:

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

Preparing activity:

DLA - CC

(Project 5930-2024-035)

Review activities:

Army - AR, 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/>.