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INCH-POUND

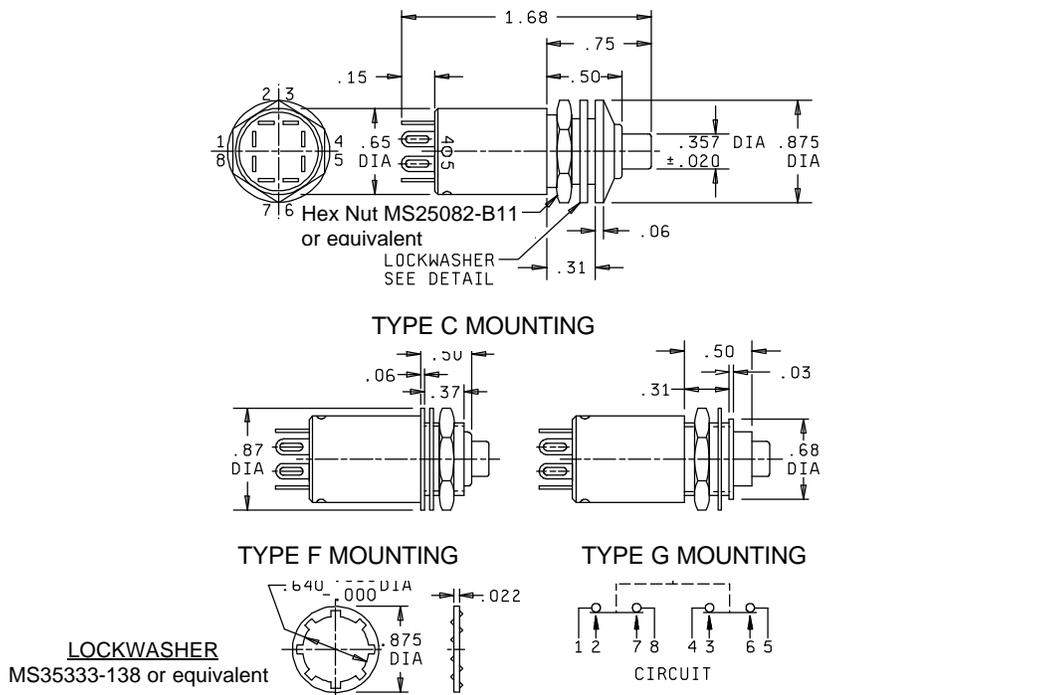
MIL-PRF-8805/38F
 3 September 1999
 SUPERSEDING
 MIL-S-8805/38E
 30 November 1987

PERFORMANCE SPECIFICATION SHEET

SWITCHES, PUSH, MOMENTARY, 4 CIRCUIT, 4 AMPERES OR LOW LEVEL, DUSTTIGHT

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.



Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.010	0.25	.055	1.40	.25	6.4	.50	12.7	.75	19.1
.020	0.51	.06	1.5	.31	7.8	.640	16.26	.87	22.1
.022	0.56	.109	2.77	.37	9.4	.65	16.5	.875	22.23
.03	0.8	.15	3.8	.375	9.53	.68	17.2	1.68	42.7

NOTES:

1. Dimensions are in inches.
2. Unless otherwise stated, tolerances are ± 0.02 (0.51 mm) for two place decimals and ± 0.005 (0.13 mm) for three place decimals.
3. The circuit and terminal arrangement shall be permanently and legibly marked on the switch case.
4. Metric equivalents are given for general information only.
5. Mounting hardware has .625-24 UNEF02A external thread and is removable for installation.
6. Alternative base metals and protective finishes, as approved by the qualifying activity, may be utilized for hardware material

FIGURE 1. Dimensions and configurations.

MIL-PRF-8805/38F

REQUIREMENTS:

Dimensions and configurations: See figure 1.

Enclosure design: 2 (dusttight).

Temperature characteristic: 1 (-55°C to +85°C).

Shock type: (50 g's sine wave) method 213, test condition A, MIL-STD-202.

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

Weight: 0.40 pound maximum.

Operating characteristics:

Total plunger travel: $.085 \pm 0.015$ inch.

Operating force: 4 ± 1 pounds.

Strength of actuator means: 25 pounds.

Terminal strength: 5 pounds.

Finish: Shall be corrosion resistant, black and lusterless.

Dielectric withstanding voltage:

Sea level: 1,000 V rms; 1,000 V rms between all terminals and mounting plate and 200 V rms between all terminals following electrical endurance.

Mechanical endurance: 50,000 cycles.

Electrical endurance: 25,000 cycles.

Electrical ratings: See table I.

Sand and dust: Applicable.

Low level circuit: Applicable when specified (see table III).

Electronic logic circuit (5.0 V dc, .010 ampere): Applicable when specified (see table III); 25,000 cycles at an actuation rate of 120 cycles per minute maximum with no "stick", or "misses", allowed when tested in accordance with ANSI/EIA RS448, method 17 as follows:

Test condition:

Each switch contact shall be tested using a 5.0 ± 0.5 V dc, 10 ± 1 mA resistive load. During each closure of the contacts, the voltage drop across the switch terminals shall be monitored for a duration of no less than 50 percent of each contact static closure. The switch contacts need not be monitored until 10 milliseconds after the initial contact closure to exclude any contact bounce. During each opening of the contacts, the voltage drop across the switch terminals shall be monitored for a duration of no less than 50 percent of each contact opening.

A voltage of 2.1 volts or greater across the switch terminals shall constitute a contact "miss" (failure to properly close the circuit). A voltage drop of less than 90 percent of the open-circuit voltage shall constitute a contact "stick" (failure to properly open the circuit).

The monitoring device shall either record the number of contact closures at which "sticks" and/or "misses" occur, or discontinue the test when "sticks" and/or "misses" occur.

MIL-PRF-8805/38F

Operating temperature:

- a. 25 percent for the test cycle at -55°C specified.
- b. 25 percent for the test cycle at room ambient conditions.
- c. 50 percent for the test cycle at +85°C.

Qualification:

Group submission: See table II.

Part number: See table III.

TABLE I. Electrical ratings, power circuit switches (MS27903-1 through MS27903-6).

Load	Sea level	
	28 V dc	115 V ac, 400 Hz
	(Amperes)	(Amperes)
Resistive	4	4
Inductive	2	2
Motor	2	2

TABLE II. Qualification inspection.

Examination or test	Basic switch	Other switch samples	Extent of Approval	
Qualification inspection table of MIL-PRF-8805	MS27903-1 or MS27903-2 (all sample units)	MS27903-3, MS27903-4, MS27903-5, MS27903-6 (2 sample units each) Visual and mechanical examination	MS27903-1 through MS27903-06	
Group I and group X of the qualification inspection table of MIL-PRF-8805 plus 2 additional samples shall be subjected to logic level circuit and operating characteristics	MS27903-7 or MS27903-8			All

MIL-PRF-8805/38F

TABLE III. Part numbers and characteristics.

Part number	Type	Button	Electrical ratings
MS27903-1	C	Black	Power circuit rating (see table I)
MS27903-2	C	Red	
MS27903-3	G	Black	
MS27903-4	G	Red	
MS27903-5	F	Black	
MS27903-6	F	Red	
MS27903-7	C	Black	Low level and logic level rating
MS27903-8	C	Red	
MS27903-9	G	Black	
MS27903-10	G	Red	
MS27903-11	F	Black	
MS27903-12	F	Red	

Custodians:
DLA - CC
Navy - EC

Preparing activity:
DLA - CC

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