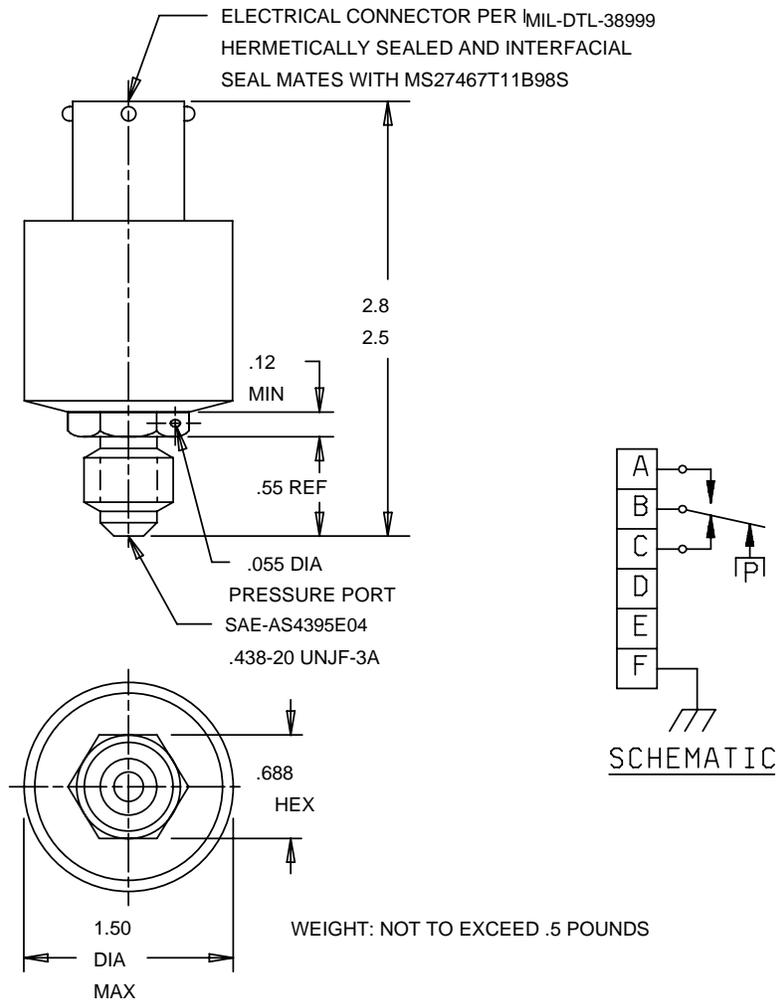


DETAIL SPECIFICATION SHEET

SWITCHES, PRESSURE, (GAGE) TYPE II, LOW LEVEL TO 5 AMPERES

This specification is approved for use by all Departments and Agencies of the Department of Defense.

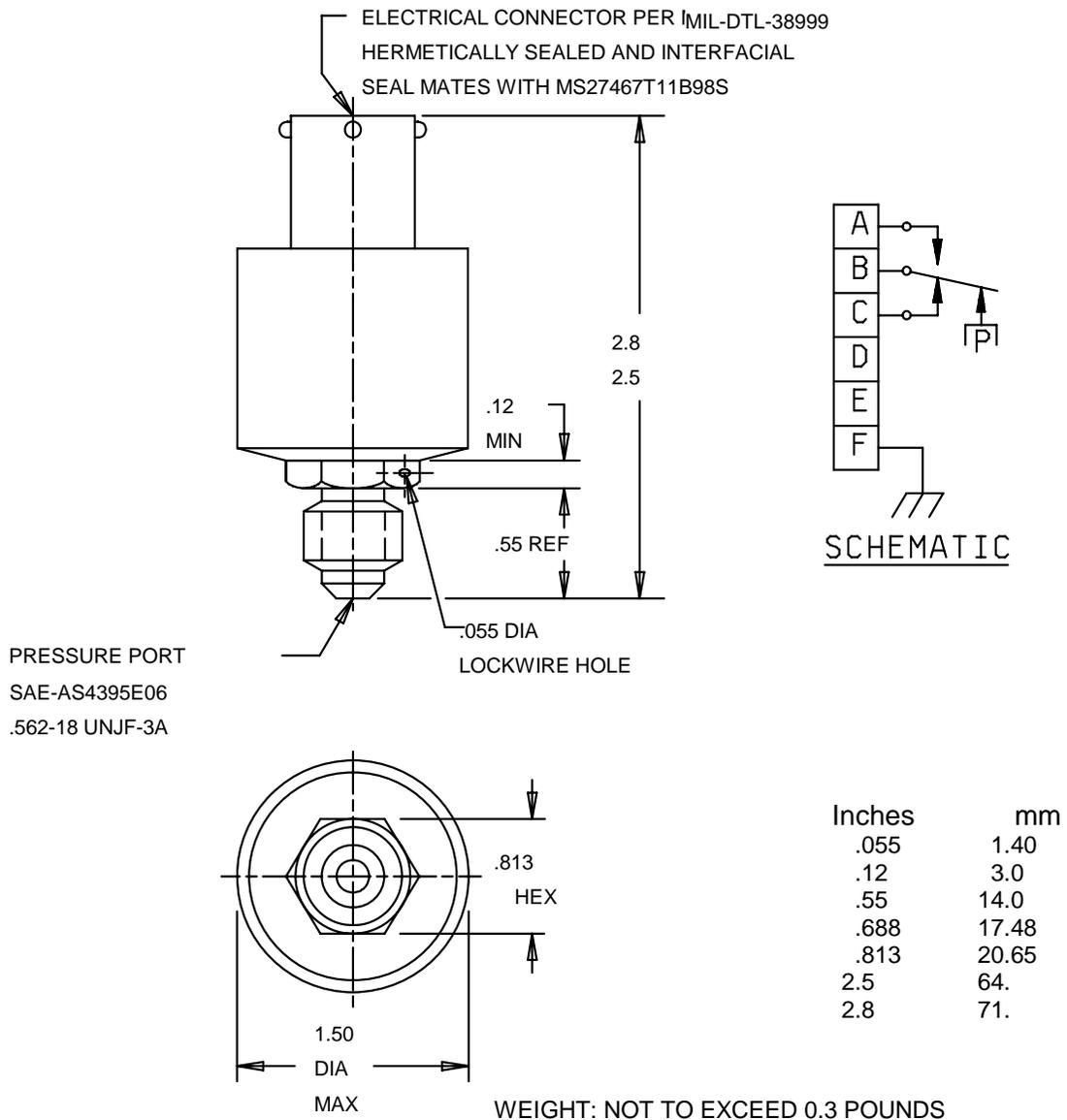
The requirements for acquiring the switches described herein shall consist of this document and MIL-DTL-9395.



CONFIGURATION 1

FIGURE 1. Switches.

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CONFIGURATION 2

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. Exact shape of switch is optional provided outline dimensions specified are not exceeded and connector locations are as specified.
4. Schematics shown are for switches with pressure ports exposed to zero lb<sub>f</sub>/in<sup>2</sup>.

FIGURE 1. Switches - Continued.

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REQUIREMENTS:

Dimensions, configurations, and electrical schematic: See figure 1.

Weight: See figure 1.

Calibration: See tables I, II, III, and IV.

System pressure: 125 lb<sub>f</sub>/in<sup>2</sup>.

Proof pressure: 250 lb<sub>f</sub>/in<sup>2</sup>.

Burst pressure: 500 lb<sub>f</sub>/in<sup>2</sup>.

Electrical ratings: See table I.

Minimum current: 25,000 cycles.

Low level: 50,000 cycles.

NOTE: Switches shall be subjected only to low level loads prior to delivery.

Seal:

Electrical chamber: See table I.

Pressure chamber: Hermetic.

Reference chamber: Unsealed.

Electrical connector: See figure 1.

Pressure port: See figure 1.

Media: Dry air; nitrogen gas; fuel IAW MIL-DTL-5624; lubricating oil IAW MIL-PRF-7808; hydraulic fluid IAW MIL-PRF-6083 or MIL-PRF-83282; oxygen; or Coolanol 25R, or equal.

High temperature (operating and nonoperating): D (400°F and 500°F for 30 minutes).

Low temperature (operating and nonoperating): D (-65°F).

Altitude: C (except 80,000 ft).

Shock: C (100 G).

Vibration: S (test condition D, method 204 of MIL-STD-202, except 10 to 2,000 Hz, 20 G).

Life (mechanical): A (100,000 cycles).

Life (electrical): C (50,000 cycles).

Acceleration: C (8 G).

Pulsation amplitude: A (0 %).

Pulsation frequency: A (0 Hz).

Pressure rise: A (less than 100 lb<sub>f</sub>/in<sup>2</sup>).

Dielectric withstanding voltage (at reduced barometric pressure): Applicable at 350 V rms.

Electrical connector torque: 8 foot-pounds.

Switch mounting torque: 15 foot-pounds.

Terminal strength: Applicable.

Flame test: Applicable.

Explosion: Applicable.

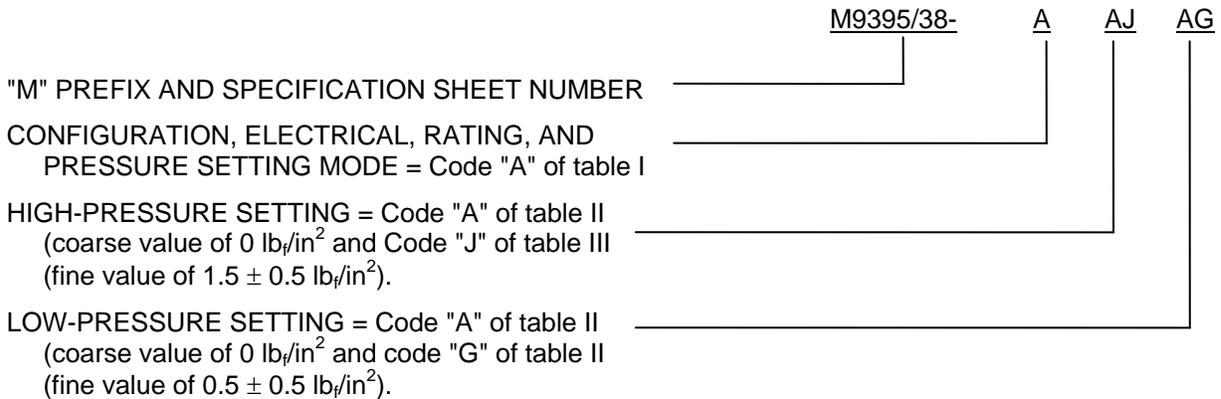
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QUALIFICATION:

Single submission: Restricted to switch submitted.  
 Group submission: See table V.

PART NUMBER: Consists of "M" prefix followed by specification sheet number; a dash (-); and a five-letter code. The five-letter code identifies the configuration, electrical rating, and pressure setting mode (code from table I); high-pressure setting (coarse value code from table II) followed by fine value with applicable tolerance (code from table III); and low-pressure setting (coarse value code from table II) followed by fine value with applicable tolerance (code from table III). The five-letter code used in the following example identifies a switch of configuration 1, low level to 1 ampere resistive at 28 V dc, which actuates on increasing pressure at  $1.5 \pm 0.5 \text{ lb}_f/\text{in}^2$  and deactuates on decreasing pressure at  $0.5 \pm 0.5 \text{ lb}_f/\text{in}^2$ .

EXAMPLE:



NOTE: Design limitations (actuation values and tolerances, deadband and actuation values and tolerances) should be coordinated with the manufacturer(s) listed on the QPL for this spec sheet before specifying a particular "M" number. The fact that operating characteristics can be coded does not necessarily mean that it can be manufactured or procured.

TABLE I. Codes for combinations of configurations, electrical ratings, and pressure settings modes.

	Low level to 1 A resistive at 28 Vdc				1.5 to 5 A resistive at 28 Vdc				Pressure setting mode	
	Configuration				Configuration					
	1		2		1		2		High setting	Low setting
	Electrical chamber		Electrical chamber		Electrical chamber		Electrical chamber			
Hermetic	Unsealed	Hermetic	Unsealed	Hermetic	Unsealed	Hermetic	Unsealed			
Code	A	D	G	K	N	R	U	X	At (or max) <u>1/</u>	At (or min) <u>1/</u>
Code	B	E	H	L	P	S	V	Y	At (or max) <u>1/</u>	Differential <u>2/</u>
Code	C	F	J	M	Q	T	W	Z	Differential <u>2/</u>	At (or min) <u>1/</u>

1/ Setting values are designated by codes from table II and III.

2/ Setting values are designated by codes from table IV.

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TABLE II. Codes for coarse settings.

Code	Coarse value (lb <sub>f</sub> /in <sup>2</sup> )	Code	Coarse value (lb <sub>f</sub> /in <sup>2</sup> )	Code	Coarse value (lb <sub>f</sub> /in <sup>2</sup> )
A	0	L	30	W	80
B	2.5	M	35	X	85
C	5	N	40	Y	90
D	7.5	P	45	Z	95
E	10	Q	50	1	100
F	12.5	R	55	2	105
G	15	S	60	3	110
H	17.5	T	65	4	115
J	20	U	70	5	120
	25	V	75	6	125

TABLE III. Codes for combinations of fine settings and tolerance values.

	Fine value (lb <sub>f</sub> /in <sup>2</sup> ) for settings below 20 lb <sub>f</sub> /in <sup>2</sup>					Tolerance (lb <sub>f</sub> /in <sup>2</sup> )
	0	0.5	1	1.5	2	
Code	A	B	C	D	E	±0.25
Code	F	G	H	J	K	±0.5
Code	L	M	N	P	Q	±1.0
Code	R	S	T	U	V	±1.5
Code	W	X	Y	Z	1	±2.0
Code	2	3	4	5	6	±2.5
Code	7	8	9	0	-	Min or Max
	Fine value (lb <sub>f</sub> /in <sup>2</sup> ) for settings of 20 lb <sub>f</sub> /in <sup>2</sup> and above					Tolerance (lb <sub>f</sub> /in <sup>2</sup> )
	0	1	2	3	4	
Code	A	B	C	D	E	±1.0 <sup>1/</sup>
Code	F	G	H	J	K	±2.0 <sup>2/</sup>
Code	L	M	N	P	Q	±3.0 <sup>3/</sup>
Code	R	S	T	U	V	±4.0
Code	W	X	Y	Z	1	±5.0
Code	2	3	4	5	6	±6.0
Code	7	8	9	0	-	Min or Max

<sup>1/</sup> Not applicable for pressure settings above 33 lb<sub>f</sub>/in<sup>2</sup>.

<sup>2/</sup> Not applicable for pressure settings above 66 lb<sub>f</sub>/in<sup>2</sup>.

<sup>3/</sup> Not applicable for pressure settings above 100 lb<sub>f</sub>/in<sup>2</sup>.

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TABLE IV. Codes for differential settings. 1/

Code	Differential value (lb <sub>f</sub> /in <sup>2</sup> )	Code	Differential value (lb <sub>f</sub> /in <sup>2</sup> )
A	0	T	11
B	0.5	U	12
C	1	V	13
D	1.5	W	14
E	2	X	15
F	2.5	Y	16
G	3	Z	18
H	3.5	1	20
J	4	2	22
K	4.5	3	24
L	5	4	26
M	5.5	5	28
N	6	6	30
P	7	7	35
Q	8	8	40
R	9	9	45
S	10	0	50

1/ Differential settings require two codes, minimum differential and maximum differential.

TABLE V. Extent of qualification.

Part number	No. of samples required	Tests	Qualifies
<b>ELECTRICAL CHAMBERS EITHER HERMETICALLY SEALED OR UNSEALED</b>			
M9395/38-AAEAH	2 ea. resistive	Complete IAW qualification inspection on MIL-DTL-9395	All
-NAEAH	2 ea. intmd current		
-N6R4R	2 ea. low level		
A6R4R	2 ea. resistive		
<b>ELECTRICAL CHAMBERS UNSEALED</b>			
M9395/38-BAEAH	2 ea. resistive	Complete IAW qualification inspection of MIL-DTL-9395	Configuration codes D, E, F, K, L, M, R, S, T, X, Y, Z.
-DAEAH	2 ea. intmd current		
-D6R4R	2 ea. low level		
-X6R4R	2 ea. resistive		

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

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

Referenced Documents:

MIL-DTL-5624  
MIL-PRF-6083  
MIL-PRF-7808  
MIL-DTL-9395  
MIL-DTL-38999  
MIL-PRF-83282  
MIL-STD-202

Custodians:

Army - CR  
Navy - EC  
Air Force - 11

Preparing activity:  
DLA - CC

(Project 5930-2006-054)

Review activities:

Army - AV  
Navy - MC, SH  
Air Force – 99

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 <http://assist.daps.dla.mil/> .