



DEFENSE LOGISTICS AGENCY
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MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

14 December 2020

SUBJECT: Initial Draft of MIL-DTL-28827/1D
Project Numbers: 5930-2021-009.

The subject document is now available for viewing and downloading from the DLA Land and Maritime - VA website:

<https://landandmaritimeapps.dla.mil/programs/milspec/initialdrafts.aspx>

The following is a synopsis of the changes:

Updated to current MIL-STD-961 and Land and Maritime SOP requirements.
Reference documents updated.

Concurrence or comments are required at this Center no later than 13 January 2021. If comments are not received during the allotted coordination period, concurrence may be assumed. Late comments may be held for the next specification action. Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians of this office, as applicable, in sufficient time to allow for consolidating the department reply.

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MICHAEL A. RADECKI
Chief
Electronic Components Branch

NOTE: This draft, dated 14 December 2020 prepared by DLA-CC,
has not been approved and is subject to modification.
DO NOT USE PRIOR TO APPROVAL.
(Project 5930-2021-009)

INCH-POUND
MIL-DTL-28827/1D
DRAFT
SUPERSEDING
MIL-DTL-28827/1C
26 January 2011

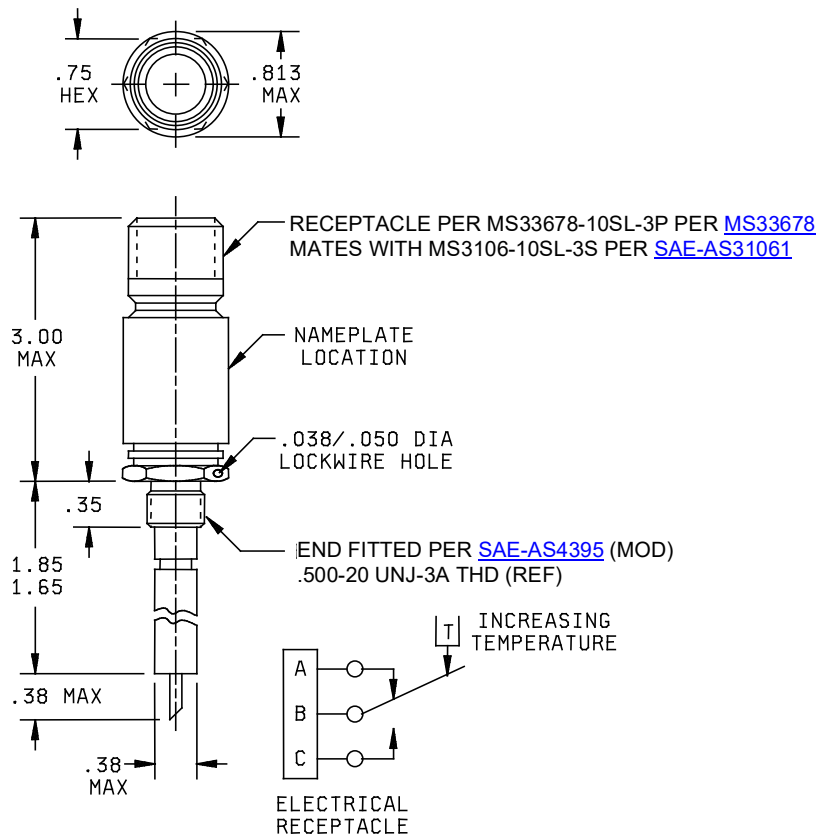
DETAIL SPECIFICATION SHEET

SWITCH, THERMOSTATIC (VOLATILE LIQUID), HERMETIC SEALED,
SINGLE POLE DOUBLE THROW (SPDT), MEDIUM RESPONSE TIME

Inactive for new design after 8 March 1999.

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-DTL-28827](#).

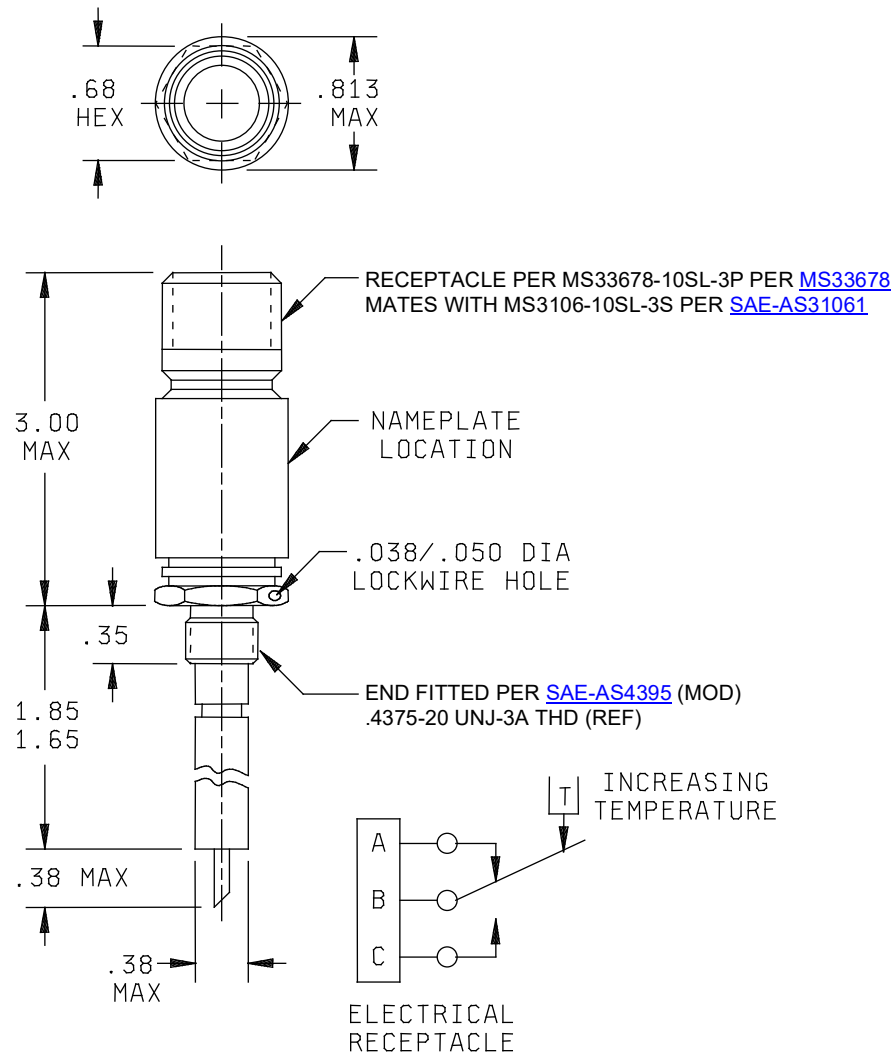


NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified tolerances are ± 0.005 .

FIGURE 1. Configuration 1.





- NOTES:
1. Dimensions are in inches.
 2. Unless otherwise specified tolerances are $\pm .005$.

FIGURE 2. Configuration 2.

REQUIREMENTS:

Dimensions, configurations, and electrical schematic: See figure 1 and 2.

Weight: 2 ounces approximately

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

Proof pressure: 3,000 psig.

Proof temperature: 100°F above the maximum increasing set point.

Time constant: Not to exceed 10 seconds in 75 centistokes, oil at 150 ft/min.

Electrical ratings:

Operating voltage: 28±5 V dc.

Current rating: .080 to 1.0 amps resistive.

Seal: Electrical chamber hermetic.

Media: [MIL-PRF-6083](#)

High temperature: (Ambient operating and non-operating): (+275°F).

Low temperature: (Ambient operating and non-operating): (-65°F).

Altitude: C (80,000 ft).

Shock: M(100 g's).

Vibration: S (test condition D, of [MIL-STD-202-204](#)).

Endurance: B (25,000 cycles).

Materials: All wetted materials shall be 300 series stainless steel. Non-wetted external parts shall be suitably protected against corrosion.

Part or Identifying Number (PIN):

Note: Design limitations (actuation values and tolerances, deadband and deactuation values and tolerances) should be coordinated with a manufacturer (s) listed on the QPL for this 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.

<u>M28827/1-</u>	<u>A</u>	<u>C</u>	<u>D</u>	<u>A</u>	<u>B</u>
Specification sheet number	Configuration and setting code (see table I)	High temperature setting to within 20°F (see table II) or low end of differential setting (see table V)	High temperature setting to within 2°F and tolerance (see table III or table IV) or high end differential setting (see table V)	Low temperature setting to within 20°F (see table II) or low end differential setting (see table V)	Low temperature setting to within 2°F and tolerance (see table III or table IV) or high end differential setting (see table V)

Example of PIN:

M28827/1-ACDAB identifies a switch of configuration 1 which actuates on increasing temperature at 146°F ± 5°F and deactuates at 102°F ± 5°F.

TABLE I. Code characters for combinations of configurations and temperature setting modes.

High Setting	Low Setting	Configuration	
		1	2
At <u>1</u> /	At <u>1</u> /	A	J
At <u>1</u> /	By <u>2</u> /	B	K
At <u>1</u> /	Differential <u>3</u> /	C	L
By <u>2</u> /	At <u>1</u> /	D	M
By <u>2</u> /	By <u>2</u> /	E	N
By <u>2</u> /	Differential <u>3</u> /	F	P
Differential <u>3</u> /	At <u>1</u> /	G	Q
Differential <u>3</u> /	By <u>2</u> /	H	R

1/ Setting values are designated by characters from tables II and III.

2/ Setting values are designated by characters from tables II and IV.

3/ Setting values are designated by characters from table V.

TABLE II. Temperature setting to within 20°F.

Temperature	Code
100	A
120	B
140	C
160	D
180	E
200	F
220	G
240	H
260	J
280	K
300	L
320	M
340	N
360	P
380	Q
400	R
420	S
440	T
460	U
480	V
500	W

TABLE III. Temperature setting within 2°F and tolerance.

Unit	Tolerance		
	±5	±10	±25
0	A	L	W
2	B	M	X
4	C	N	Y
6	D	P	Z
8	E	Q	1
10	F	R	2
12	G	S	3
14	H	T	4
16	J	U	5
18	K	V	6

Table IV. Temperature setting to within 2°F.

Unit	Maximum or minimum
0	A
2	B
4	C
6	D
8	E
10	F
12	G
14	H
16	J
18	K

TABLE V. Code letters for differentials temperature settings.

Code letter	Differential temperature (°F)
A	0
B	5
C	10
D	15
E	20
F	25
G	30
H	35
J	40
K	45
L	50
M	60
N	75

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where modifications from this revision 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.

Referenced Documents:

MIL-DTL-28827	MIL-PRF-6083
MIL-STD-202-204	MS33678
SAE-AS4395	

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

Preparing activity:
DLA- CC

(Project number 5930-2021-009)

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/>.