

MILITARY SPECIFICATION

SWITCHES, THERMOSTATIC, (METALLIC AND BIMETALLIC),
GENERAL SPECIFICATION FOR

This amendment forms a part of MIL-S-24236B, dated 26 April 1972,
and is approved for use by all Departments and Agencies of the
Department of Defense.

PAGE 2

2.1, list of military specifications, add:

"MIL-R-5757/10 - Relays, Electrical, Hermetically Sealed, DPDT, Low Level
and 2 Amperes."

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3.8, line 2, add.

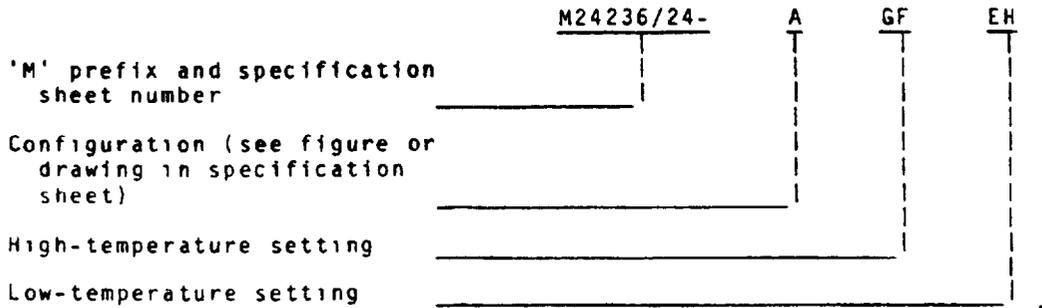
"Switches that are rated for minimum current (see 3.31) or low level (see
3.30) shall be subjected to only these loads during qualification, group A,
and group B testing."

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3.28.1, delete and substitute:

"3.28.1 Military part number. The military part number shall consist of the
'M' prefix followed by the applicable specification sheet number, a dash (-),
and the following (see 3.1):

- a. Sequentially assigned number (i.e., -001, -01) - Examples:
M24236/1-001, M24236/14-01
- b. Letter codes assigned to indicate applicable design features (i.e.,
configuration, contact action, high operating temperature, low operating
temperature, probe length) - Examples M24236/1-AGFEH; M24236/11-AACD,
M24236/13-AHC, M24236/24-AGFEH.



After 3.29, add the following new paragraphs.

"3.30 Low level (when specified, see 3.1 and 6.1.2). When switches are tested as specified in 4.7.23, there shall be no failures. A failure shall be a contact resistance exceeding 100 milliohms either during or after the test. The allowable temperature tolerance during and after testing shall be the initial temperature tolerance and an additional $\pm 5^{\circ}\text{F}$.

"3.31 Minimum current (intermediate current) (when specified, see 3.1 and 6.1.2). When switches are tested as specified in 4.7.24, there shall be no failures. A failure is defined as a cycle of operation during which any switch circuit under test fails to close or open in proper sequence as detected by the relay and monitoring device. The allowable temperature tolerance during and after testing shall be the initial temperature tolerance and an additional $\pm 5^{\circ}\text{F}$.

"3.32 Resistance to solvents. When switches are tested as specified in 4.7.25, the markings shall be legible."

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4.4, delete and substitute.

* "4.4 Inspection conditions. Unless otherwise specified herein, all inspections shall be performed in accordance with the test conditions specified in the "GENERAL REQUIREMENTS" of MIL-STD-202 with the following exception

a. Relative humidity shall be 20 to 75 percent."

4.5.2, delete and substitute

"4.5.2 Inspection routine. The sample shall be subjected to the inspections specified in table II in the order shown. All sample units shall be subjected to the inspections of group I in the order shown. The sample shall then be divided as specified in table II for groups II to VI inclusive, and subjected to the inspection for their particular group."

TABLE II, delete and substitute.

"TABLE II Qualification inspection.

Examination or test	Requirement paragraph	Method paragraph
<u>Group I (all sample units) 1/</u>		
Visual and mechanical examination - - - -	3.1, 3.4, 3.5, 3.28, and 3.29	4.7.1
Solderability (3 sample units) - - - -	3.7	4.7.2
Calibration - - - - -	3.8	4.7.3
Creepage (when applicable) - - - - -	3.9	4.7.4
Sensitivity response - - - - -	3.10	4.7.5.1
Temperature anticipation (when applicable)	3.11	4.7.6
Seal (as applicable) - - - - -	3.12	4.7.7
Dielectric withstanding voltage - - - -	3.13	4.7.8
Insulation resistance - - - - -	3.14	4.7.9
Contact resistance - - - - -	3.15	4.7.10
<u>Group II (3 sample units from group I)</u>		
Thermal shock - - - - -	3.16	4.7.11
Terminal strength - - - - -	3.17	4.7.12
Low level (when specified) - - - - -	3.30	4.7.23
Moisture resistance - - - - -	3.18	4.7.13
Flame response (when applicable) - - - -	3.19	4.7.14
Short circuit - - - - -	3.20	4.7.15
<u>Group III (4 sample units from group I)</u>		
Minimum current (intermediate current) (when specified) - - - - -	3.31	4.7.24
Vibration - - - - -	3.21	4.7.16
Shock - - - - -	3.22	4.7.17
<u>Group IV (sample number dependent on electrical loads 2/)</u>		
Overload cycling - - - - -	3.23	4.7.18
Endurance - - - - -	3.24	4.7.19
<u>Group V (all sample units from groups II, III, and IV)</u>		
Visual and mechanical examination - - - -	3.1, 3.4, 3.5, 3.28, and 3.29	4.7.1
Calibration - - - - -	3.8	4.7.3
Creepage (when applicable) - - - - -	3.9	4.7.4
Sensitivity response - - - - -	3.10	4.7.5.1
Temperature anticipation (when applicable)	3.11	4.7.6
Seal (as applicable) - - - - -	3.12	4.7.7
Dielectric withstanding voltage - - - -	3.13	4.7.8
Insulation resistance - - - - -	3.14	4.7.9
Contact resistance - - - - -	3.15	4.7.10
Resistance to solvents - - - - -	3.32	4.7.25

See footnotes at end of table.

"TABLE II. Qualification inspection - Continued.

Examination or test	Requirement paragraph	Method paragraph
<u>Group VI (4 sample units from group I shall be included and identified in this group)</u>		
Salt spray (corrosion) - - - - -	3.25	4.7.20
Sand and dust (2 sample units) (when applicable) - - - - -	3.26	4.7.21
Explosion (2 sample units) (when applicable) - - - - -	3.27	4.7.22

- 1/ Total number of sample units is dependent upon the number of loads specified (see 3.1).
- 2/ Three sample units shall be tested at the lowest temperature at the rated ac resistive load for which qualification is sought (see 3.1).
 Three sample units shall be tested at the midrange temperature at the rated ac resistive load for which qualification is sought (see 3.1).
 Three sample units shall be tested at the highest temperature for which qualification is sought at each load specified (see 3.1)."

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TABLE IV, Subgroup 1: After "Terminal strength", add the following.

"Low level (when specified) - - - - - 3.30 4 7.23"

TABLE IV, Subgroup 2: After "Shock", add the following:

"Minimum current (intermediate current) (when specified) - - - - - 3.31 4 7.24"

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TABLE V, delete and substitute: (NOTE. MS25017 may still be used.)

"TABLE V. Short circuit wire size and circuit breaker or fuse designations

Resistive rating at lowest voltage, amperes	Specification MIL-W-5086 wire size	Circuit breaker or fuse
Less than 5 - - - - -	AN-20	MIL-F-15160/2, characteristic A, rating as applicable.
5 - - - - -	AN-20	MS25244-5
7.5 - - - - -	AN-18	MS25244-7
10 - - - - -	AN-18	MS25244-10
15 - - - - -	AN-18	MS25244-15
18 - - - - -	AN-16	MS25244-20
20 - - - - -	AN-16	MS25244-20
25 - - - - -	AN-14	MS25244-25

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After 4.7.22(a), add the following new paragraphs.

"4.7.23 Low level (when specified, see 3.1). Switches shall be tested for the number of cycles specified (see 3.1) as follows:

- a. Contact load - Each switch contact shall make, carry, and break a resistive load of 10 milliamperes maximum at an open circuit voltage of 30 millivolts maximum dc or peak ac. Both normally open and normally closed contacts shall be loaded. Contacts shall be connected to individual loads.
- b. Operate cycles - Rate not to exceed 6 cycles per minute.
- c. Monitoring circuit - The monitoring equipment shall provide a record of the number of cycles and shall record failures, or discontinue the test, if a failure occurs. During each closure, the contact potential shall be monitored for at least 50 percent of the time the contacts are closed.

"4.7.24 Minimum current (intermediate current) (when specified, see 3.1). Switches shall be subjected to the number of cycles of make-and-break operations specified (see 3.1), in a circuit having a 27 +3 and -0 volt dc source and a load consisting of the coil of relay, part number M5757/10-033, or equivalent. The cycling rate shall not exceed 6 cycles per minute, and switches shall be monitored for make-and-break operations.

"4.7.25 Resistance to solvents (see 3.32). Switches shall be tested in accordance with method 215 of MIL-STD-202. The following details and exception shall apply.

- a. Portion to be brushed - All marking areas.
- b. Number of specimen to be tested - Three.
- c. Extent of mechanical or electrical damage - Not applicable."

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6.1.2(1)(2) Delete "4.8.17" and substitute "4.7.16", and add the following

"(o) Low level, if applicable (see 3.30)

(p) Minimum current (intermediate current), if applicable (see 3.31)."

Concluding material (Custodians, Review, and User activities). Delete and substitute as shown in this amendment.

The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment 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 last previous amendment.

MIL-S-24236B
AMENDMENT 4

CONCLUDING MATERIAL

Custodians.

Army - ER
Navy - EC
Air Force - 85

Review activities:

Army - AR, MI
Navy - AS, OS
Air Force - 99
DLA - ES

User activities:

Army - AT, AV, ME, SM
Navy - CG, MC, SH, YD
Air Force - 19

Preparing activity:
Navy - EC

Agent:
DLA - ES

(Project 5930-1465)