INCH-POUND

MIL-S-24236/16F
28 June 1995
SUPERSEDING
MIL-S-24236/16E
30 September 1992

MILITARY SPECIFICATION SHEET

SWITCH, THERMOSTATIC (METALLIC), TYPE II, OVERHEAT DETECTOR, ADJUSTABLE, DUAL TERMINAL, 3 AMPERES

This specification 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 sheet and the issue of the following specifications listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-S-24236.

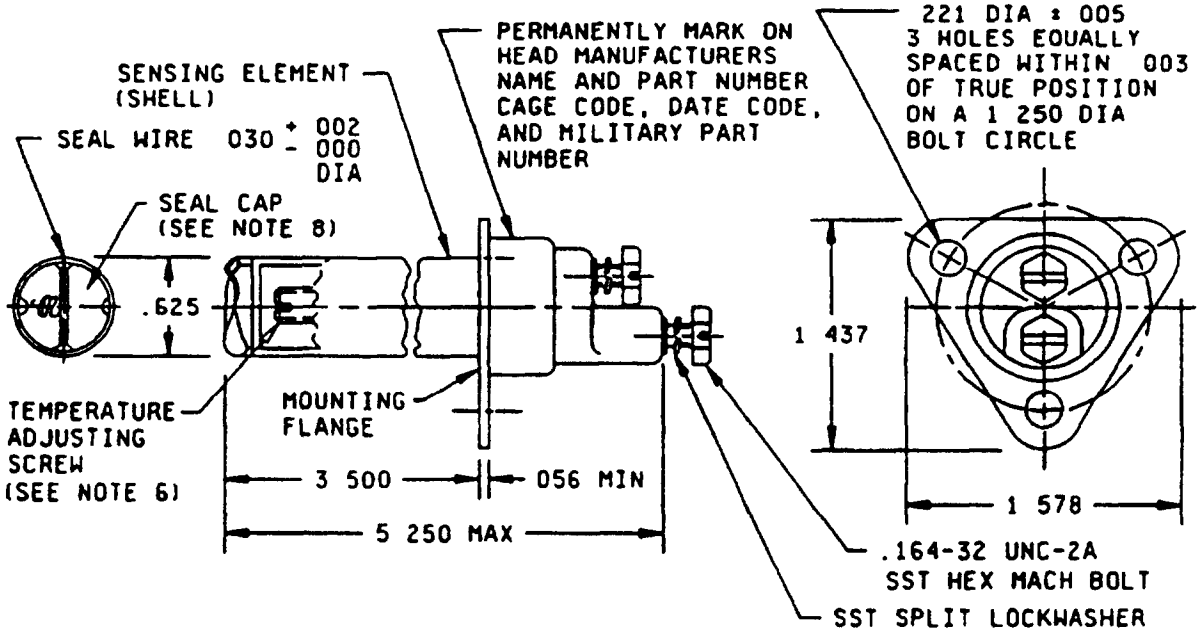

FIGURE 1. Configuration and dimensions

(F) denotes change

Inches	mm	Inches	mm
.002	0.05	.625	15.88
003	0.08	1.250	31.75
005	0.13	1.437	36.50
.030	0.76	1.578	40 08
.056	1.42	3.500	88.90
.221	5.61	5 250	133.35

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified tolerances are .016 (0.41 mm).
4. The shell and flange must be perpendicular within ±1 degree
5. The mounting bracket forms an integral part of the switch housing.
6. A locking feature shall be incorporated to prevent inadvertent changing of the adjusting screw. Both the adjusting screw and the locking feature shall be protected with a metal cover, wired in place as shown, in such a manner that removal of this protective cover is required to permit readjustment. Removal and replacement of the cover shall not easily be accomplished without the use of some device considered a tool.
7. The adjustable feature is provided for maintenance to maintain marked set point within the setting tolerance of table 1.
8. The temperature setting shall be marked on the seal cap.

FIGURE 1. Configuration and dimensions - Continued

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Enclosure design: 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.

Class: Class 4, except vibration of 10 g's.

Ambient temperature range. -65°F to 1,000°F.

Operating temperature: See table I.

Temperature adjustment: The threaded temperature adjusting screw (see figure 1) shall be so designed and constructed that the operating temperature can be easily adjusted over the range 135°F to 900°F, without the use of special tools. One revolution of the mechanism shall not change the operating temperature by more than 370°F.

Delivery temperature: Prior to delivery, switches shall be adjusted to operate at the applicable operating temperature.

Temperature markings: The operating temperature setting of the switch shall be durably and legibly marked as shown on figure 1.

TABLE I Operating temperature.

Dash number	Temperature setting		Dash number	Temperature setting	
	°F	Tolerance °F		°F	Tolerance °F
135	135	±20	550	550	±20
180	180	±20	600	600	±20
215	215	±20	650	650	±20
240	240	±20	675	675	±20
250	250	±20	700	700	±20
300	300	±20	725	725	±20
325	325	±20	750	750	±20
400	400	±20	825	825	±25
425	425	±20	900	900	±25
450	450	±20			
500	500	±20			
525	525	±20			
535	535	±20			

Test tolerances: The allowable post test set point tolerance should be referenced to the actual pretest set point.

Electrical ratings: 3 amperes (lamp) at 28 V dc

Environmental test effect: Not applicable.

Weight: 6 ounces maximum, including terminal hardware.

Visual and mechanical examination: X-ray is applicable.

Solderability: Not applicable.

Method for quality conformance inspection: Go-no-go test procedure (type II). The switch shall be inserted into a standard high temperature test block, and the switch terminals connected to a relay coil. The relay contacts shall control the power to the test block heater and operate a lamp to indicate when the switch contacts transfer. The switch shall be allowed to cycle "on and off", a minimum of ten(10) cycles. The operating temperature of the switch will be determined by observing the temperature at the time of contact closure as indicated by the lamp. The operating temperature of the switch shall be within the tolerances listed in table I.

Sensitivity response: Applicable.

Temperature anticipation: Applicable.

(F) Watertight seal: Applicable to switch contact chamber with the following exceptions: The switch contact chamber shall be immersed up to but not to include the mounting flange A vacuum shall be drawn to an absolute pressure of 0 inch to 6 inches of mercury. This pressure shall be maintained for a minimum of one minute. Any evidence of a continuous stream of bubbles from within the contact chamber shall be cause for failure.

Dielectric withstanding voltage: Test voltage 500 V rms, current flow not to exceed 100 microamperes.

Insulation resistance: Not less than 2 megohms.

Contact resistance: Not applicable.

Thermal shock: Method 107 of MIL-STD-202, test condition E, except low temperature shall be -65°F and following the test shall be within ±25°F of the pretest temperature setting following the test.

Terminal strength. Method 211 of MIL-STD-202. Test conditions A and E, with 25 inch-pounds for condition E.

(F) Moisture resistance: Measurements shall be taken upon completion of tests and again after switches have dried. Insulation resistance shall be not less than 2 megohms.

(F) Flame response: Applicable. Flame tests shall be conducted using the burner and method of flame temperature measurement specified in MIL-F-7872 The flame shall completely envelop the sensing element of the switch. Starting ambient for flame response shall be a minimum of 200°F below switch operating temperature, or room ambient, whichever is greater. The switch shall be cooled to this ambient following each exposure.

Vibration: Monitor for contact closure or opening, as applicable, during resonance search There shall be no loosening of terminal hardware. Calibration check after testing shall be within ±25°F of pretest temperature setting.

Shock: Applicable. Testing to be conducted at room ambient and without electrical load and thermal conditions. No measurements are to be taken during testing. Calibration test at conclusion shall be within ±25°F of pretest temperature setting

Endurance: 2,000 cycles. Final setting to within ±30°F of pretest of temperature setting

Sand and dust Not applicable.

Test sampling: Fifteen sample units shall be subject to qualification testing. They shall be set, 5 each, to 215°F, 600°F, and 900°F, prior to the start of testing. For quality conformance inspection every fifth sample unit undergoing the inspection shall be set to 250°F, tested, reset to 900°F, and tested The applicable terminal hardware shall be installed on each sample unit prior to testing and shall be kept on throughout the tests.

Part or Identifying Number (PIN): M24236/16- (dash number from table I).

CONCLUDING MATERIAL

Custodians:
Army - ER
Navy - EC
Air Force - 85

Review activities:
Army - AR, AT, AV, MI, MR, SM
Navy - AS, CG, MC, OS, SH
Air Force - 19, 99

Preparing activity.
DLA - ES

(Project 5930-1588)