

METRIC

MIL-I-27209C
AMENDMENT-3

01 APRIL 1994

Superseding
Amendment - 2
29 August 1967

MILITARY SPECIFICATION

INDICATOR, TEMPERATURE, THERMOCOUPLE, SELF-BALANCING, POTENTIOMETER TYPE

This amendment forms a part of Military Specification MIL-I-27209C, dated 15 November 1965, and has been approved by all Departments and Agencies of the Department of Defense.

Page 1

*Add Beneficial comments at bottom of page and substitute:

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Technology & Industrial Services Division, SA-ALC/TILDD, Kelly AFB, TX 78241-5000 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

Pages 1 and 2, paragraph 2.1: Under Military Specifications, delete the following documents:

"MIL-P-7936	Parts and Equipment, Aeronautical, Preparation for Delivery
MIL-M-26512	Maintainability Program Requirements, for Aerospace Systems and Equipment
MIL-R-26667	Reliability and Longevity requirements, Electronic Equipment, General Specification for
MIL-D-70327	Drawings, Engineering and Associated Lists
MIL-STD-794	Parts and Equipment, Procedures for Packaging and Packing of"

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paragraph 2.1: Under Military Standards, add the following documents:

MIL-STD-100	Engineering Drawing Practices
MIL-STD-470	Maintainability Program Requirements for Systems and Equipment
MIL-STD-471	Maintainability Demonstration

AMSC N/A

FSC 6685

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MIL-STD-781 Test Levels and Accept/Reject Criteria for Reliability of Non-Expendable
Electronic Equipment
*MIL-STD-2073-1 Packing, Packaging, Preservation & Transportability

Page 4

Paragraph 3.5.5: Delete, and substitute:

"3.5.5 Maintainability. - The contractor's maintainability program shall be in accordance with MIL-STD-470.

Paragraph 3.6(d), first line: Insert period after "hour". Delete second and third lines.

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Paragraph 3.7, third line: Delete "MIL-D-70327" and substitute "MIL-STD-100".

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Paragraph 3.8.1: Delete, and substitute:

"3.8.1 Filling medium. - The filling medium shall be of at least 98 percent purity, free of dust particles, and shall contain not more than 0.006 milligrams of water vapor per liter (dew point -65° C) at the filling pressure. The filling medium shall be 88 percent to 92 percent nitrogen and the remainder helium. The absolute pressure of the filling medium in the case shall be approximately 12 to 12.7 psi."

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Table II, under MS24569-3:

(a) Opposite "Dial numerals", in column titled "Height or length", delete "0.156" and substitute "0.125"; in column titled "Width of line or graduation", delete "0.031" and substitute "0.025".

(b) Opposite "Major graduations", in column titled "Height or length", delete ".156" and substitute "0.125"; in column titled "width of line or graduation", delete ".031" and substitute "0.025".

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Paragraph 4.4.2.2, item (n): Add "(4.6.26)" as paragraph reference.

Add as new paragraph:

"4.5.6 Unless otherwise specified, the indicator shall be tested with MIL-W-5846, type I, class E, No. 20 American Wire cage thermocouple lead wire."

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Paragraph 4.6.4: Delete, and substitute:

4.6.4 Sealing. - The indicator case shall be tested for leaks by means of a mass-spectrometer-type helium

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leak detector. The detected leak rate shall not exceed 0.1 micron cubic foot per hour at a pressure differential of 12 to 14.7 psi."

Paragraph 4.6.5, seventh line: After "5° C.", add ", as viewed by the dial."

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Paragraph 4.6.6, first, second, and third lines: Delete first two sentences and substitute:

"Millivoltage and power shall be applied to the indicator to provide an indication of 1,000° C. The millivoltage required to obtain the 1,000°C indication shall be recorded. The millivoltage shall then be adjusted to provide an indication of 100° C. The power supply shall then be turned off and the millivoltage readjusted to that required to obtain the 1,000°C indication."

Paragraph 4.6.7:

(a) Fourth line: Between "change" and "shall", insert ", based on the pointer coming to final rest,".

(b) Add as last sentence: "The indicator shall be lightly tapped or vibrated before each reading to remove normal instrument friction."

Paragraph 4.6.8, second sentence: Delete, and substitute:

"A change in the millivoltage equivalent to 2° C shall be made at each test point. A change of 2° ±°C in indication, as determined by pointer indication, shall result."

Paragraph 4.6.11, second sentence: Delete, and substitute:

"Pointer oscillation shall be monitored during the entire test and shall at no time exceed 5°C double amplitude."

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Paragraph 4.6.18: Between "closed." and "Pointer", insert as ninth sentence:

"The grounding may be accomplished at any point along the thermocouple leads between the indicator receptacle and the signal source and any common ground may be used."

Page 20

(a) Paragraph 4.6.26: Add as last sentence: "The test program shall conform to MIL-STD-785."

(b) Paragraph 4.6.26.1, third and fourth sentences: Delete, and substitute:

"Duration of the test on each unit, acceptance, permitting production, and the total test hours shall be determined on the basis of test plan A of MIL-STD-781. Recording, data handling, and reporting procedures shall be in accordance with MIL-STD-785."

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(c) Paragraph 4.6.27: Delete, and substitute:

"4.6.27 Maintainability. - The maintainability program shall be based upon MIL-STD-470. Maintainability verification shall be in accordance with MIL-STD-471. The procedure shall be chosen by the contractor and submitted to the procuring activity for approval."

Page 21

Paragraph 5.1.1, second line: Delete "MIL-P-7936" and substitute "MIL-STD-2073-1".

Custodians:

Air Force - 99
Navy - AS

Reviewer activities

Navy - AS
Air Force - 11

Preparing activity:

Air Force - 82

(Project 6685-0902)