INCH-POUND

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SUPERSEDING
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15 March 1985

MILITARY SPECIFICATION

# PROBE, TOTAL TEMPERATURE, DEICEABLE

Inactive for new design after 24 March 1999.

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

## 1. SCOPE

1.1 Scope. This document covers the requirements for total temperature probes capable of operating during atmospheric icing conditions.

1.2 Classification. The total temperature probes will be of the following types (see 6.2).

Type I - Single element

Type II - Dual element

Comments, suggestions, or questions on this document should be addressed to Defense Supply Center Richmond, ATTN: DLA-Aviation, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616 or e-mailed to STDZNMGT@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at https://assist.dla.mil.

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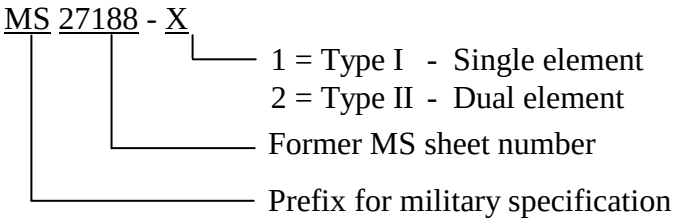
1.3 Part or identifying number (PIN). The PIN for total temperature probes is formed as shown. The former MS27188 number is retained for continuity.




## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of the documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Standards and handbooks. The following standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MS33678 - Connector, Receptacle, Electric, Integral Mounting

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-130 - Identification Marking of U.S. Military Property
MIL-STD-464 - Electromagnetic Environmental Effects Requirements for Systems
MIL-STD-810 - Environmental Engineering Considerations and Laboratory Tests
MIL-STD-889 - Dissimilar Metals
MIL-STD-31000 - Technical Data Packages

DEPARTMENT OF DEFENSE HANDBOOKS

MIL-HDBK-831 - Preparation of Test Reports

(Copies of these documents are available online at https://assist.dla.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

SAE INTERNATIONAL

| | |
|---|---|
| SAE-AS31061 | - Connector, Plug, Electric, Straight, Solder Contacts, AN Type |
| SAE-AS31071 | - Connector Plug, Electric, Quick Disconnect |
| SAE-AS-31081 | - Connectors, Plug, Electric, Solder Contact, 90 Degree, AN Type |

(Copies of these documents are available online at http://www.sae.org/servlets/index or from SAE, Inc., 400 Commonwealth Drive, Warrendale PA 15096.)

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA

| | |
|---|---|
| NASM24694 | - Screw, Machine, Flat Countersunk Head, 100 Deg., Structural, Cross Recessed, UNC-3A and UNF-3A |

(Copies of this document are available online at www.aia-aerospace.org/or from Aerospace Industries Association of America, 1250 I St. NW, Suite 1100, Washington, DC 20005)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the reference cited herein (expect for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

3.1 First article. When specified, a sample shall be subjected to a first article inspection (see 4.3 and 6.2).

3.2 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern.

3.3 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.4 Materials.

3.4.1 Nonmagnetic materials. Nonmagnetic materials shall be used for all parts except where magnetic materials are essential.

3.4.2 Fungus resistant material. Materials that are nutrients for fungi shall not be used where it is practical to avoid them. Where used and not hermetically sealed, they shall be treated with a fungicidal agent acceptable to the procuring activity.

3.4.3 Corrosive Fumes. The materials, as installed in the probe and under the service conditions specified herein, shall not liberate toxic, harmful or corrosive fumes.

3.4.4 Metals. Metals shall be of a corrosion-resistant type or suitably treated to resist corrosion due to fuels, salt fog, or atmospheric conditions likely to be found in storage or normal service.

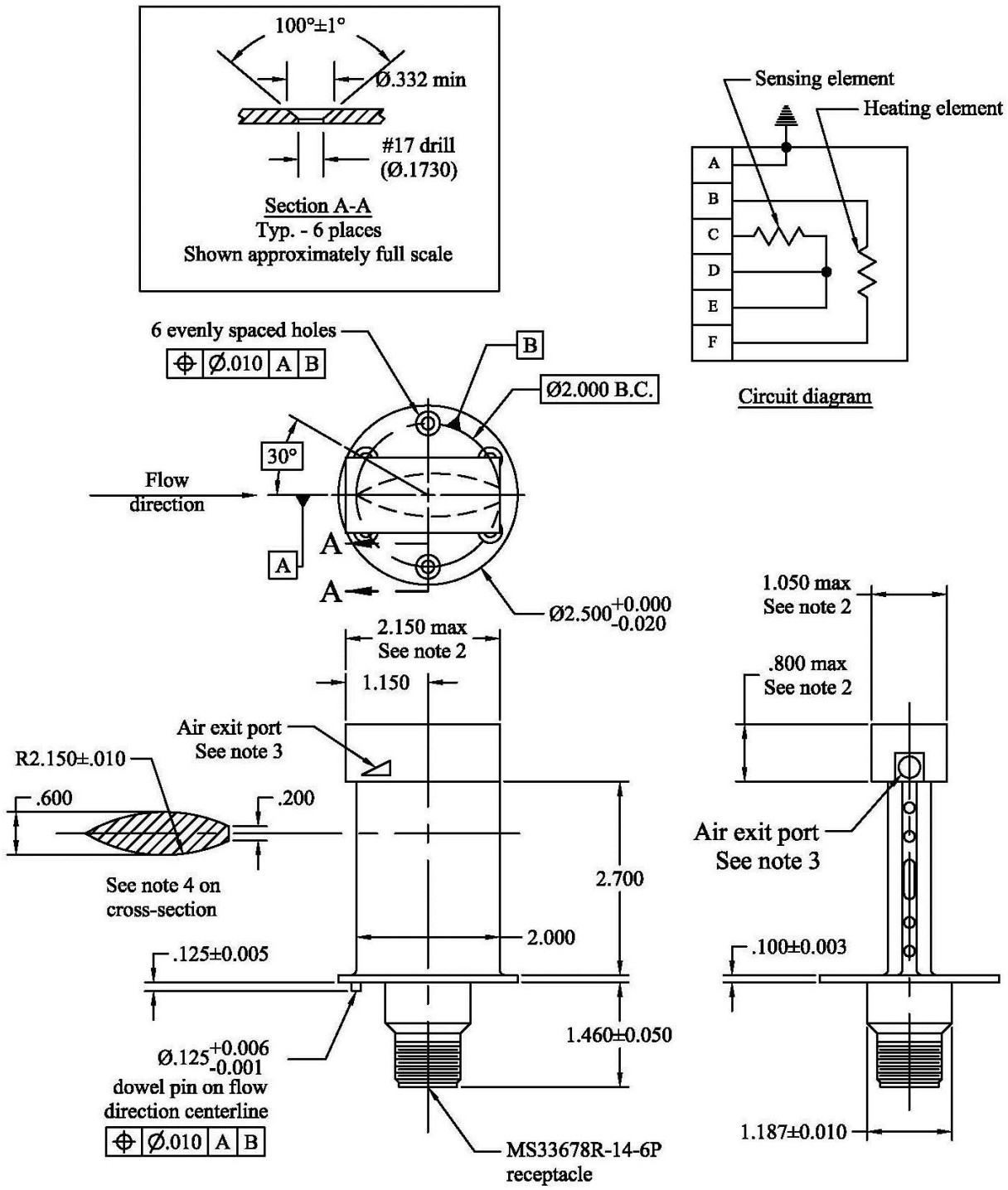
3.4.4.1 Dissimilar metals. Unless suitably protected against electrolytic corrosion, dissimilar metals shall not be used in intimate contact with each other. Dissimilar metals are defined in MIL-STD-889.

3.4.5 Protective treatment. When materials are used in the construction of the probe that are subject to deterioration when exposed to climatic and environmental conditions likely to occur during service usage, they shall be protected against such deterioration in a manner that shall in no way prevent compliance with the performance requirements of this specification. The use of any protective coating that may crack, chip, or scale with age or with extreme climatic or environmental conditions shall be avoided.

3.5 Design and construction.

3.5.1 Design. The design of the probe shall conform to figures 1 and 2 and shall include a resistance element, air scoop, strut, mounting flange, electrical connector, and heaters necessary to prevent the formation of ice. The design details shall in no way constitute a waiver from the performance requirements specified herein.

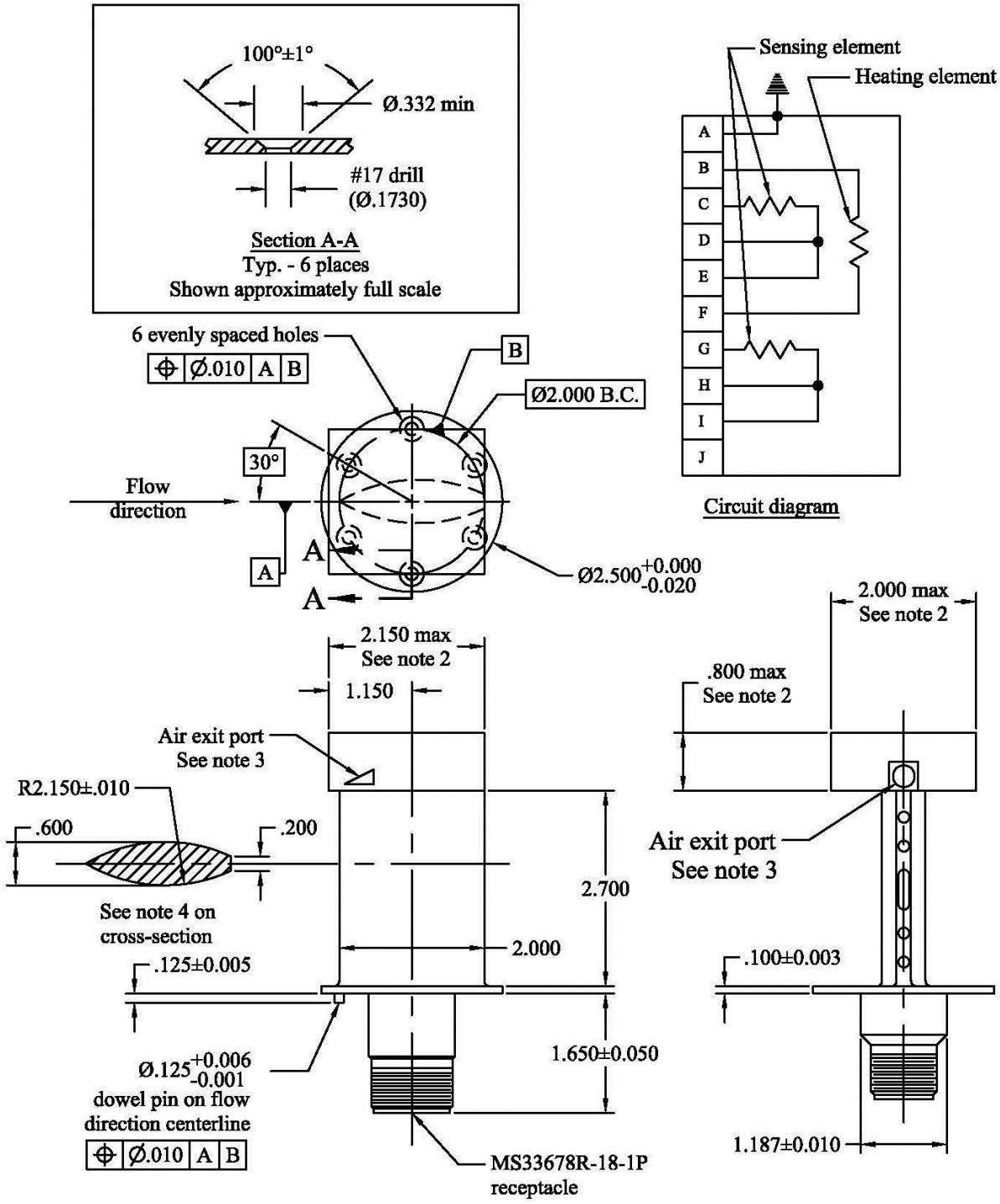
3.5.1.1 Temperature compensation. The deicing heater element shall be automatically regulated in such a manner that the power dissipated through the heater will be an inverse function of the heater element temperature.




Shown approximately 1/2 scale unless specified.

NOTES: 1. All dimensions in inches, tolerances ±.030 unless specified.
2. Dimensions marked "max" are air scoop envelop. Actual shape optional.
3. Location of air exit ports shown for reference only.
4. Blade cross-section is for exterior profile only. Interior passages optional.

FIGURE 1. Single-element probe, total temperature, deiceable.




Shown approximately 1/2 scale unless specified.

NOTES: 1. All dimensions in inches, tolerances ±.030 unless specified.
2. Dimensions marked "max" are air scoop envelop. Actual shape optional.
3. Location of air exit ports shown for reference only.
4. Blade cross-section is for exterior profile only. Interior passages optional.

FIGURE 2. Dual-element probe, total temperature, deiceable.

3.5.2 Construction.

3.5.2.1 Temperature resistance relationship. The temperature sensing element shall be constructed of pure platinum wire and the temperature versus resistance relationship shall be accordance with the Callendar-Van Dusen equation:

$$\frac{R_T}{R_0} = 1 + \alpha \left[ T - \delta \left( \frac{T}{100} - 1 \right) \left( \frac{T}{100} \right) - \beta \left( \frac{T}{100} - 1 \right) \left( \frac{T}{100} \right)^3 \right]$$

Where: $R_T$ = resistance at temperature T in °C
$R_0$ = resistance at 0°C
$\alpha = 0.003925$
$\delta = 1.45$
$\beta = 0.0$ (for temperatures above 0°C)
$\beta = 0.10$ (for temperatures below 0°C)
T = temperature in °C

The resistance of the temperature-sensing element shall be adjusted to 50.00 ohms at 0°C. Deviations from the Callendar-Van Duse equation over the temperature range of the probe shall be no greater than allowed by the following equation:

$$\Delta T = \pm (0.25 + 0.005T)$$

Where: T = temperature in °C
$\Delta T$ = allowable deviation in °C
When T is below 0°C, the absolute value in °C shall be used in this equation.

3.5.2.2 Hermetic Sealing. The temperature-sensing and deicing elements shall be hermetically sealed.

3.6 Performance. The probe shall be capable of meeting the requirements specified herein under the following conditions

a. Temperature – temperatures ranging from -70°C to +350°C.
b. Humidity – relative humidity up to 100 percent.
c. Vibration – vibration in accordance with MIL-STD-810, method 514, operational conditions for fixed wing jet aircraft.
d. Thermal shock – cycling at temperatures ranging from 0°C ±5°C to 200±5°C alternately for 30 minute periods.
e. Temperature resistance – measurable resistance over the range of 0°C to the boiling point of water.
f. Insulation – satisfactory electrical resistance measurements of the temperature-sensing element after being submerged in water for a period of 8 hours.
g. Salt fog– simulated sea salt atmosphere.
h. Fungus – fungus as encountered in tropical climates.
i. Sand and dust – sand and dust particles as encountered in desert areas.

3.6.1 Insulation resistance of temperature-sensing element. The temperature-sensing element shall have an insulation resistance greater than 10 megohm (MΩ).

3.6.2 Thermal response. When subjected to an internal airflow of mach 0.3 at sea level, the time constant shall not exceed 1.5 seconds.

3.6.3 Reactance. The impedance of the temperature-sensing element shall not vary more than 0.04 ohm at any frequency from 0 to 2,000 cycles per second (cps) when tested for inductive or capacitive reactance effect.

3.6.4 Self-heating. A current of 50 milliamperes (ma) in the sensing element shall not change the resistance more than 3°C at sea level with an internal airflow of mach 0.3.

3.6.5 Static loading. The probe shall withstand static impact pressure up to mach 2.0.

3.6.6 Deicing and anti-icing. With the heater operating at rated voltage, accumulated ice shall be removed from the inlet in less than 2 minutes and ice which would affect the temperature indicator shall not re-form for a continuous period of 15 minutes when the probe is subjected to a wind tunnel speed of 325±25 knots at a temperature of -30±5°C with a liquid water content of 1.25±0.25 grams per cubic meter.

3.6.7 Recovery error. The recovery error shall be no greater than 0.5 percent of the absolute total temperature.

3.6.8 Conduction and radiation errors. Conduction and radiation errors shall not exceed the tolerance specified in Table 1.

Table I. Aerodynamic conditions.

| Stagnation Pressure mmHg | Stagnation Temperature °C | Allowable error in measured stagnation temp ± percent |
|---|---|---|
| 1,000 | 250 | 0.5 |
| 1,000 | 350 | 0.5 |
| 100 | 250 | 0.5 |
| 100 | 350 | 0.7 |
| 30 | 250 | 0.7 |
| 30 | 350 | 1.0 |

3.6.9 Deicing heater error. The deicing heater element shall not change the indicated temperature of the temperature-sensing element more than 1°C when the deicing heater element is operated at rated voltage and the probe is in an internal airflow of mach 0.3 at sea level conditions.

3.6.10 Deicing heater element life. The heater power consumption (see 4.6.10) shall change no more than 10 percent after a deicing heater element life test. No damage shall result that would otherwise affect proper operation of the probe.

3.6.11 Insulation resistance of deicing heater element. The deicing heater element shall have an insulation resistance greater than 1 megohm when measured with 500V root mean square (rms) 60 hertz current applied.

3.6.12 Still air operation. The probe, while in room temperature air, shall be capable of withstanding the heat caused by the operation of the deicing heater.

3.6.13 Low temperature exposure and power consumption. After exposure to a temperature of -70°C and when power is applied to the heater element, the initial power surge shall not exceed 1,200W. After 5 seconds, the power consumption shall not exceed 700W and after 20 seconds it shall not exceed 500W.

3.6.14 High temperature exposure. After high temperature exposure, the resistance of the temperature-sensing element determined at 0°C and at 100°C shall not differ by more than the equivalent of 0.2°C from the resistance values before high temperature exposure.

3.7 Part numbering and interchangeable parts. All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable. The item identification and part number requirements of MIL-DTL-31000 shall govern the manufacturer's part numbers and changes thereto.

3.8 Operating power. The deicing heater element shall operate on 115V, 400 hertz alternating current (AC).

3.8.1 Heater power consumption. The nominal heater power consumption shall be 350W when the heater is operating under in-flight icing conditions with the static temperature ranging from -10° to -35°C and an indicated air-speed of from 200 to 350 knots.

3.9 Weight. The weight of the single-element probe shall not exceed 400 grams and the weight of the dual-element probe shall not exceed 500 grams.

3.10 Identification of product. Equipment, assemblies, and parts shall be marked for identification in accordance with MIL-STD-130.

3.11 Workmanship. The probe shall be constructed and finished paying particular attention to neatness and thoroughness of soldering, wiring, marking of parts and assemblies, plating, welding, brazing, and freedom of parts from burrs and sharp edges.

3.11.1 Cleaning. The probe shall be thoroughly cleaned and loose, spattered, or excess solder, metal chips, and other foreign materials shall be removed during and after final assembly.

## 4. VERIFICATION

4.1 Classifications of inspection. The inspection requirements specified herein shall be as follows:

a. First article inspection (see 4.3)
b. Acceptance tests (see 4.4)

4.2 Test conditions. Unless otherwise specified, the probe shall be tested in air at standard conditions at room temperature (approximately 25°C) and at sea level pressure (approximately 760 mm Hg).

4.2.1 Calibration stability. During the course of the tests, a change in calibration which does not meet the requirements of 3.5.2.1 shall constitute failure. This does not imply compulsory calibration after each test.

4.2.2 Current measurement. All resistance measurements shall be made so that the current flowing through the temperature-sensing element will be of such magnitude the self-heating effect will not exceed 0.1°C.

4.3 First article inspection.

4.3.1 First article test samples. The first article test samples shall consist of three probes representative of the production equipment. The probes shall be identified with the manufacturer's part number and other information as required by the procuring activity. A test Sample shall be furnished to the procuring activity (see 6.2).

4.3.2 Test report and test sample. When the tests are conducted at location other than the laboratory of the procuring activity, the following shall be furnished to that activity:

a. Test report, three copies of the test report. MIL-HDBK-831 may be used for guidance.
b. Test sample, the sample that was tested.

4.3.3 First article tests. The first article tests shall consist of all the tests specified in 4.6.

4.4 Acceptance tests. Acceptance tests shall consist of:

a. Individual tests (4.4.1)
b. Sampling tests (see 4.4.2)

4.4.1 Individual tests. Each probe shall be subjected to the following tests as described under 4.5.

a. Examination of product (see 4.6.1)
b. Temperature-resistance (see 4.6.2)
c. Insulation resistance of temperature-sensing element (see 4.6.3)

d. Insulation resistance of deicing heater element (see 4.6.11)
e. Still air operation (see 4.6.12)

4.4.2 Sampling tests.

4.4.2.1 Sampling plan A. One probe, selected at random from each 40 or less produced on the contract or order, shall be subjected to the following tests

a. Individual tests (see 4.4.1)
b. Temperature calibration (see 4.6.15)
c. Vibration (see 4.6.16)
d. Heater power consumption (see 4.6.17)
e. Hermetic sealing (see 4.6.18)

4.4.2.2 Sampling plan B. Unless otherwise specified (see 6.2), 3 probes, selected at random from the first 15 items on the contract or order, shall be subjected to the following tests:

a. Sampling plan A tests (see 4.4.2.1)
b. Thermal response (see 4.6.4)
c. Reactance (see 4.6.5)
d. Static loading (see 4.6.6)
e. Deicing and anti-icing (see 4.6.7)
f. Conduction and radiation errors (see 4.6.8)
g. Deicing heater error (see 4.6.9)
h. Deicing heater element life (see 4.6.10)
i. Low temperature and power consumption (see 4.6.13)
j. High temperature exposure (see 4.6.14)
k. Recovery error (see 4.6.19)
l. Self-heating (see 4.6.20)
m. Humidity (see 4.6.21)
n. Thermal shock (see 4.6.22)
o. Salt fog (see 4.6.23)
p. Fungus (see 4.6.24)
q. Sand and dust (see 4.6.25)

4.5 Rejection and retest. When an item selected from a production run fails to meet the specification, no items still on hand or later produced shall be accepted until the extend and cause of failure have been determined and appropriately corrected. After correction, all of the tests shall be repeated.

4.5.1 Individual test may continue. For production reasons, individual tests or other sampling plans may be continued pending the investigation of a sampling test failure, but final acceptance of items on hand or items produced later shall not be made until it is determined that all items meet all requirements of this specification.

4.6 Test methods.

4.6.1 Examination of product. The probe shall be inspected to determine compliance with the requirements specified herein with respect to interchangeability, dimensions, materials, workmanship, and marking.

4.6.2 Temperature-resistance. The resistance of the temperature-sensing element shall be measured at 0°C and at 100˚C of water. The probe shall meet the temperature resistance requirements of 3.5.2.1.

4.6.3 Insulation resistance of temperature-sensing element. The probe shall be completely submerged in tap water for a period of 8 hours. Upon completion of the 8 hour period, the probe shall be removed from the water and dried for 1 hour. At the end of this time, a potential of 100V direct current (DC) shall be applied between any electrical receptacle pin contact of the temperature-sensing element (pin C or D) and any ground part of the probe. The temperature sensing element shall meet the insulation resistance requirements of 3.6.1.

4.6.4 Thermal response. The time constant of the temperature-sensing element shall be determined in an internal airflow of mach 0.3 at sea level pressure and shall meet the requirement of 3.6.2. The thermal time constant is the time required for the probe to reach 63 percent of the step function change in temperature as expressed by the following equation:

$$a - b_1 = (a - b)\, e^{-t/T}$$

Where: a = final temperature
$b_1$ = temperature at time t
b = temperature at time t=0
t = time in seconds
T = thermal time constant in seconds

4.6.5 Reactance. The probe shall be tested for inductive and capacitive resistance effect on the impedance of the temperature-sensing element and shall meet the requirements of 3.6.3.

4.6.6 Static loading. The probe shall be statically loaded to simulate the impact pressures produced by mach 2.0 flow at sea level pressure. No visible damage to the probe shall result. The resistance of the temperature-sensing element shall then be determined at 0°C and 100°C and shall not differ by more than the equivalent of 0.2°C from the resistance value before this test.

4.6.7 Deicing and anti-icing. The probe shall be tested in an icing wind tunnel at an indicated tunnel speed of 325±25 knots. The tunnel static temperature for the tests shall be between -25°C and -35°C. The liquid water content shall be between 1.00 and 1.50 grams per cubic meter of air. The procedure for the test shall be as follows: Ice shall be allowed to form on the air inlet of the probe until the ice cap has extended ½ inch from the inlet tip. Power shall then be applied at rated voltage and the total time to remove all accumulated ice from the inlet

shall be less than 2 minutes. At the end of this time, the indicated temperature of the temperature-sensing element shall return to within 1°C of the reading before the ice was allowed to accumulate. If temperature fluctuations exist in the icing wind tunnel, the average of several test runs may be used. After the ability of the probe to deice properly has been demonstrated, rated power shall be continually applied for an additional 15 minutes. There shall be no re-accumulation of ice on the probe that would affect the temperature indication.

4.6.8 Conduction and radiation errors. The conduction and radiation errors of the probe shall be determined by dynamic conditions, by analytical means, or by comparison of similarity to other temperature probes. The approval of such methods and results shall be made by the contracting officer. The conduction and radiation errors of the probe as shown by one or more of the above methods shall meet the requirements of 3.6.8.

4.6.9 Deicing heater error. The probe shall be subjected to an internal airflow of mach 0.3 at room temperature and pressure with the deicing heater element de-energized. When the temperature-sensing element has reached the stabilized condition, the deicing heater element shall be energized. After a period of 3 minutes, the temperature indicated shall be no more than 1°C above the temperature indicated with the heater de-energized. If the temperature fluctuations exist in the air stream, the average of several tests may be used.

4.6.10 Deicing heater element life. The heater power consumption (see 4.6.17) shall change no more than 10 percent after a life test consisting of 40 hertz of 10 hours with power on and 2 hours with power off. One-hundred of the 400 hours of operation shall be run in still air at room temperature. The other 300 hours of operation shall be run with the probe in an airflow at room temperature and with a velocity no greater than 50 knots. The probe shall meet the deicing heater element life requirements of 3.6.10.

4.6.11 Insulation resistance of deicing heater element. Following the test of 4.6.2, a potential of 500V rms, 60 hertz, shall be applied between any electrical pin contact of the deicing heater element (pin B or F) and any ground part of the probe. The deicing heater element shall meet the insulation resistance requirements of 3.6.11.

4.6.12 Still air operation. The deicing heater element shall be energized at rated voltage for 5 minutes in still air. At the end of the 5 minute period, the heater power consumption shall be less than 200w; the application of power shall cause no damage to the probe. The resistance of the temperature-sensing element shall be determined at 0° and 100°C, and shall not differ from the resistance values before this test by more than the equivalent of 0.2°C. The resistance calibration at 0° and 100°C need not be made if this test is conducted prior to the temperature sensing. The probe shall meet the insulation still air operation requirements of 3.6.12.

4.6.13 Low temperature and power consumption. The probe shall be subjected to a temperature of -70°C for a period of 15 hours. Rated voltage shall then be applied to the heater element through a 5-amp fuse and shall not be of such duration as to render the fuse inoperative. Power shall be determined after rated voltage is initially applied, after 5 seconds and after 20

seconds. Power shall then be removed and the probe subjected to -70°C for an additional 24 hours. After exposure, the resistance of the temperature-sensing element shall be determined at 0°C and 100°C. The probe shall meet the low temperature and power consumption requirements of 3.6.13. No damage shall result from the test.

4.6.14 High temperature exposure. The probe shall be subjected consecutively to a temperature of 250±10°C for a period of 7 hours and a temperature of 350±10°C for a period of 1 hour for a total of 80 hours (10 cycles). The probe shall meet the high temperature exposure requirements of 3.6.14.

4.6.15 Temperature calibration. The resistance of the temperature-sensing element shall be measured at 0°C, at 100˚C, at a temperature between 250°C and 350°C, and at -40°C. The resistance at each of these points shall meet the temperature resistance requirements of 3.5.2.1.

4.6.16 Vibration. The probe shall be subjected to a vibration test in accordance with MIL-STD-810 method 514.3 at room temperature with rated load applied. No visible damage to the probe shall result. After vibration, the resistance of the temperature-sensing element shall be determined at 0°C and at 100°C and shall not differ by more than the equivalent 0.2°C from the resistance values before vibration testing. The probe shall meet the vibration requirements of 3.6.

4.6.17 Heater power consumption. The deicing heater element shall be energized at rated voltage with the housing submerged in agitated ice water (as an approximation to icing conditions). The power consumption shall meet the requirements of 3.8.1.

4.6.18 Hermetic sealing. The probe shall be subjected to an immersion test in accordance with method 512 of MIL-STD-810, using water as the immersion fluid. The probe shall meet the sealing requirements of 3.5.2.2.

4.6.19 Recovery error. The recovery error of the temperature-sensing element shall be determined at the sea level pressure and temperature and shall not exceed 0.005.

The recovery error can be defined by the following equation:

$$N = \frac{T_0 - T_P}{T_0}$$

Where: $T_0$ = true stagnation temperature in degrees Kelvin
$T_P$ = temperature of the probe in degrees Kelvin
N = recovery error

4.6.20 Self-heating. The probe shall be tested in air at room temperature and pressure in an internal air flow of mach 0.3 for the self-heating effect of the temperature-sensing element. Sufficient voltage shall be applied to produce a current of 50 ma through the temperature-sensing element and the element shall meet the requirements of 3.6.4.

4.6.21 Humidity. The probe shall be subjected to a humidity test in accordance with method 507 of MIL-STD-810. The probe shall then be air dried for 1 hour after which a potential of 100V DC shall be applied between any electrical pin contacts of the temperature-sensing element (pin C or D) to any ground part of the probe. The resistance measured shall be greater than 10 megohms. A potential of 500V rms 60 Hz shall be applied between any electrical pin contact of the deicing heater element (pin B or F) and any ground part of the probe. The resistance measured shall be greater than 1 megohms. The resistance of the temperature-sensing element shall be determined at 0°C and 100°C and shall not differ from the resistance values before the test by more than the equivalent of 0.2°C.

4.6.22 Thermal shock. The probe shall be subjected to a temperature of 0±5°C for a period of 30 minutes. It shall be removed from this medium and within 15 seconds subjected to a temperature of 200±5°C for a period of 30 minutes. The probe shall then be removed from this medium and within 15 seconds, re-subjected to a temperature of 0°C. This thermal cycle shall be repeated 8 times. No visible damage to the probe shall result. The resistance of the temperature-sensing element shall then be determined at 0°C and 100°C and shall not differ by more than the equivalent of 0.2°C from the resistance value before the test.

4.6.23 Salt fog. The probe shall be subjected to a salt fog test in accordance with method 509 of MIL-STD-810. No damage shall result from this test which will affect subsequent operations of the probe.

4.6.24 Fungus. The probe shall be subjected to a fungus test in accordance with method 508 of MIL-STD-810. No damage shall result from this test which will affect subsequent operations of the probe.

4.6.25 Sand and dust. The probe shall be subjected to a sand and dust test in accordance with method 510 of MIL-STD-810. No damage shall result from this test which will affect subsequent operations of the probe.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The total temperature probe covered by this specification is intended for use in aircraft to determine the total temperature developed by adiabatic heating of the air due to the motion of the aircraft, both during and in the absence of atmospheric icing conditions.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification.
b. Type of probe required (see 1.2)
c. If sampling plan B is to be omitted (see 4.4.2.2)
d. Packaging requirements (see 5.1).
e. If First Article is required (see 4.3)

6.3 First article. When a first article inspection is required, the item will be tested and should be a first production item or it may be a standard production item from the contractor's current inventory as specified in 4.3. The first article should consist of one complete pesticide sprayer. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.4 Subject term (key word) listing.

Adiabatic
Aircraft

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

Custodians:
Navy – AS
Air Force – 99
Review Activities
Air Force – 71

Preparing Activity:
DLA – GS1

(Project 6685-2013-001)

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 database at https://assist.dla.mil.