



Designation: F3011 – 21

Standard Specification for Performance of Angle of Attack System¹

This standard is issued under the fixed designation F3011; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This performance specification covers simple systems that provide angle-of-attack information to a pilot, aircraft, or other systems.

NOTE 1—More complex AoA systems can be addressed in annexes in the future.

1.2 In this performance specification, functional operation and minimum performance requirements for an angle-of-attack system are established.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *RTCA Standard:*²

DO-160G (or later released version) Environmental Conditions and Test Procedures for Airborne Equipment

3. Terminology

3.1 *Definitions:*

3.1.1 *angle of attack, AoA, n* —acute angle between an aircraft's wing chord, wing mean chord, or other defined aircraft longitudinal axis, and the direction of the relative free stream wind.

¹ This test method is under the jurisdiction of ASTM Committee F39 on Aircraft Systems and is the direct responsibility of Subcommittee F39.03 on Design of Avionics Systems.

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² Available from RTCA, Inc., 1150 18th St., NW, Suite 910, Washington, DC 20036, <https://www.rtca.org/>.

3.1.2 *AoA system, n* —collection of components used to provide AoA information to the pilot, aircraft, or other systems.

3.1.2.1 *Discussion*—This may include simple or complex systems, depending on the intended use.

4. General Requirements

4.1 *Product Identification*—One of the major components of an AoA system, shall be labeled with the following information:

- 4.1.1 Part Number,
- 4.1.2 Serial Number, and
- 4.1.3 Manufacturer's Name.

4.2 *Operating Conditions*—The system manufacturer shall specify the following limitations for proper function:

- 4.2.1 The angular operational range of the system,
- 4.2.2 Voltage operating range (min/max), if applicable,
- 4.2.3 Electrical load specifications, if applicable, and
- 4.2.4 Restrictions regarding the use and application of deicing fluids with the system, if applicable.

4.3 *Installation Manual*—The manufacturer of the AoA system shall provide an installation manual that specifies the following information so that an installer can determine appropriate use for an aircraft installation:

- 4.3.1 A full description of the intended function of the system,
- 4.3.2 An explicit compliance statement to this standard, Specification F3011,
- 4.3.3 The operation limitations (including the items in 4.2, Operating Conditions),
- 4.3.4 The environmental conditions (including items in Section 6, Environmental Requirements),
- 4.3.5 Installation and calibration instructions required for safe, accurate, and proper operation of all intended functions of the system, and
- 4.3.6 *Instructions for Continued Airworthiness*—The manufacturer of the AoA system shall provide continued airworthiness procedures necessary to ensure safe and accurate operation (calibration, alignment to aircraft, maintenance, etc.).

4.4 *User's Manual*—The manufacturer of the AoA system shall provide a user's manual that specifies:

- 4.4.1 The functional operation of the system (including items in Section 5, Functional Requirements).