



AEROSPACE STANDARD

AS8036

REV. A

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Revised 2013-12

Superseding AS8036

(R) Cargo Compartment Fire Detection Instruments

RATIONALE

The document was revised to incorporate minimum performance standard testing for smoke detector false alarm immunity and to refer to the latest revision of DO-160, revision G.

1. SCOPE

1.1 This SAE Aerospace Standard (AS) specifies minimum performance standards for the following types of fire detection instruments intended for use in protecting aircraft cargo compartments, galleys, electronic equipment bays and other similar installations.

1.2 Types

Type I: Carbon monoxide, an instrument which will actuate an alarm signal when the concentration of carbon monoxide in air exceeds a specified value.

Type II: Smoke detector, electronic, an instrument operating on the principle of smoke particles modifying the relationship between a light beam and electronic light sensor which will actuate an alarm signal when the concentration of smoke in air exceeds a specified value.

Type III: Deleted

Type IV: Smoke detector, electronic, an instrument operating on the principle of smoke particles modifying the current in an ionization chamber which will actuate an alarm signal when the concentrations of smoke in air exceeds a specified value.

Type V: Same as Type IV except maximum operating altitude is 18 000 feet (5486 m) when installed in a non-pressurized area.

2. NORMATIVE REFERENCES

The following Standard contains provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent edition of the Standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J916 Rules for SAE Use of SI (Metric) Units

2.2 FAA Publications

Available from the Superintendent of Documents, Government Printing Office, P.O. Box 979050, St. Louis, MO 63197. Telephone (202) 512-1800, fax (202) 512-2250. You can also order copies online at www.access.gpo.gov. Select "Access," then "Online Bookstore." Select "Aviation," then "Code of Federal Regulations."

14CFR 25.855 Cargo or baggage compartments

14CFR 25.858 Cargo or baggage compartment smoke or fire detection systems.

14CFR Part 25 Appendix F (Testing)

AC 21-16G

2.3 RTCA Publications

Available from RTCA, Inc., 1150 18th Street, NW, Suite 910, Washington, DC 20036, Tel: 202-833-9339, www.rtca.org.

DO-160G Environmental Conditions and Test Procedures for Airborne Equipment

3. GENERAL STANDARDS

3.1 Materials

Materials shall be of a quality which experience and/or tests have demonstrated to be suitable and dependable for use in aircraft instruments.

3.2 Workmanship

Workmanship shall be consistent with high-grade aircraft instrument manufacturing practice.

3.3 Accessibility of Controls

Controls which are not normally adjustable in flight shall not be readily accessible to flight personnel when the instrument is installed in accordance with the manufacturer's instructions.

3.4 Interchangeability

Instruments which are identified with the same manufacturer's part or model number range and/or setting shall be completely interchangeable.

3.5 Integrity Test Means

The instrument shall be of such design to provide a means for testing the integrity of the instrument when the aircraft is operating.

3.6 Identification

The following information shall be legibly and permanently marked on the instrument or attached thereto:

- a. Name of Instrument
- b. Manufacturer's Part Number
- c. Manufacturer's Serial Number or Date of Manufacture
- d. Manufacturer's Name and/or Trademark
- e. Type Number
- f. Alarm Range and/or Setting
- g. Rating (Electrical, Vacuum, etc.)
- h. Qualification Specification Number (SAE or TSO)

3.7 Indication Means

The instrument shall be capable of actuating visual and/or aural alarm indicators

3.8 Calibration Means

An instrument designed to be adjustable shall be such that all calibration means be provided with tamper-proof seals.

3.8.1 Adjustable Detector Systems

Instruments which incorporate means for adjustment shall be tested to prove compliance with this Standard.

4. MINIMUM PERFORMANCE REQUIREMENTS UNDER STANDARD TEST CONDITIONS

4.1 Atmospheric Conditions

Unless otherwise specified, all tests required by this Standard shall be conducted at an atmospheric pressure of approximately 29.92 inches (76 cm) of mercury and at an ambient temperature of approximately 25 °C (77 °F) and at a relative humidity of not greater than 85%. When tests are conducted with the atmospheric pressure or the temperature substantially different from these values, allowance shall be made for the variation from the specified conditions.

4.2 Power Conditions

Unless otherwise specified, all tests shall be conducted at a power rating recommended by the manufacturer.

4.3 Test Position

Unless otherwise specified, the instrument shall be mounted and tested in its normal operating position.

4.4 Test Stimulus Measurement

4.4.1 Type I Instrument

All carbon monoxide measurements shall be expressed as a percentage of CO per air volume.