



AEROSPACE STANDARD

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Superseding AS5680A

Fuze Well Mechanical Interface

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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FOREWORD

This standard addresses the mechanical and physical characteristics of the interface between the weapon's fuze and the weapon fuze well to support interoperability of fuzes and weapon systems. The goal is to improve the effectiveness and readiness of NATO forces by reducing the logistics associated with supporting airborne weapon systems in the theater of operation.

This standard covers 3-in fuze wells which are common in current NATO weapon systems.

This document was prepared by the AS-1B7 Fuze Mechanical Task Group under the jurisdiction of the AS-1B Committee, Aircraft-Store Integration, of the SAE AS-1 Steering Group, Aircraft Systems and System Integration.

This effort has been closely coordinated with the AS-1B6 Fuze Systems Task Group which has been tasked by the AS-1 Steering Group to generate an AS standardizing the electrical, logical and functional characteristics of the interface between the weapon's fuze/fuzing system and the rest of the weapon to achieve airborne fuzing systems interoperability.

For information on the standardization of the electrical, logical and functional interface, reference should be made to document AS5716.

The objective of documents AS5680 and AS5716 is to jointly define the interface characteristics essential but not on their own sufficient at this time to ensure full interoperability.

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1. SCOPE

This interface standard applies to fuzes used in airborne weapons that use a 3-in fuze well. It defines:

- Physical envelope of the fuze well at the interface with the fuze.
- Load bearing surfaces of the fuze well.
- Physical envelope of the fuze and its connector.
- Mechanical features (e.g., clocking feature).
- Connector type, size, location and orientation.
- Retaining ring and its mechanical features (e.g., thread, tool interface).
- Physical envelope of the retaining ring at the interface with the fuze.
- Physical space available for installation tools.
- Torque that the installation tool shall be capable of providing.

This standard does not address:

- Materials used or their properties.
- Protective finish.
- Physical environment of the weapon.
- Explosive interface or features (e.g., insensitive munitions (IM) mitigation).
- Charging tube.
- Torque on the retaining ring or loads on the load bearing surfaces.

Each fuze and weapon combination should be evaluated to ensure that the weapon system will satisfy all safety, reliability, and performance requirements throughout its lifecycle.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 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.

AS5716 Standard Electrical and Logical Interface for Airborne Fuzing Systems

2.1.2 ASME Publications

Available from American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

ASME Y14.5M-1994 Dimensioning and Tolerancing

2.1.3 U.S. Government Publications

Available from the Document Automation and Production Service (DAPS), Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, <http://assist.daps.dla.mil/quicksearch/>.

FED-STD-H28A Screw-Thread Standard For Federal Services

MIL-DTL-38999L, Supplement 1 Detail Specification, Connectors, Electrical, Circular, Miniature, High Density, Quick Disconnect (Bayonet, Threaded, and Breech Coupling), Environment Resistant, Removable Crimp and Hermetic Solder Contacts, General Specification for

MS27467L, Amendment 1 Military Specification Sheet, Connectors, Plug, Electrical, Straight, Crimp Type, Bayonet Coupling, Series I

2.2 Definitions

NOTE: The terms “store”, “weapon” and “munition” are largely used as synonyms.

AIRCRAFT MOUNTING DEVICE: A mechanical device used to suspend a weapon during captive carry and release.

ALIGNMENT FEATURE: A device or feature that allows mounting the fuze with a defined orientation in reference to the weapon (aka Clocking).

AIRBORNE WEAPON: A weapon which is tactically deployed from an aircraft.

CHARGING TUBE: A conduit, which runs from a sensor or power source, through the weapon to the inner end of the fuze well.

FIELD INSTALLABLE FUZE: A fuze which is installed in a weapon, in the theater of operation or forward operating base (e.g., airfield), immediately prior to deployment of such weapon.

FUZE: A physical system designed to sense a target or respond to one or more prescribed conditions, such as elapsed time, pressure, or command, and initiate a train of fire or detonation in a munition. Safety and arming are primary roles performed by a fuze to preclude ignition of the munition before the desired position or time. The term Fuze usually denotes a single device. (See also Fuzing System)

FUZE RETAINING RING: A mechanical device used to securely fasten the fuze within the fuze well of a weapon.