FMU-139 C/B Electronic Bomb Fuze

An Electronic Impact/Impact Delay Fuze with Proximity Sensor Fire Signal Capability and Outstanding Operational Flexibility

The FMU-139 Bomb Fuze is an electronic impact/impact delay fuzing system designed for use by both the U.S. Navy and Air Force in the MK 80 series and M117 low drag and high drag, guided or unguided, high-explosive bombs. In addition to impact/impact delay, the fuze is capable of accepting a signal from a separate proximity sensor. The fuzing system meets all U.S. Navy and Air Force requirements, including the safety criteria of MIL-STD-1316.

The FMU-139C/B is an upgrade that incorporates an improved operating life of 240 seconds minimum, an updated booster pellet explosive (PBXN-7 vs. CH-6) and additional Electro Static Device (ESD) protection.

Features

Key features of the FMU-139 fuze include the ability to manually set the arming and event times prior to takeoff (Air Force requirement) or electrically set them by cockpit selection at bomb release (Navy requirement), easy installation and preparation for flight, compatibility with the proximity sensor fire signal, and the ability to sense a high-drag delivery.

There are two versions of the total fuzing system. The US Navy version consists of the cylindrical FMU-139C/B fuze, a closure ring, and a connector plug with warning label, packaged together in sets of nine. The version used by the US Air Force and most international users consists of the FMU-139C/B fuze, closure ring, the FZU-48/B bomb fuze initiator, and a power cable all packaged together in sets of six.

In the Navy application power is transmitted to the fuze from the AN-AWW series Fuze Function Control Set (FFCS) through the MK-122 Arming Safety Switch, at release from the aircraft. In the Air Force application, power is provided by the FZU-48/B an air-driven turbine alternator, which is lanyard activated upon release from the aircraft.

Safety features of the FMU-139C/B include dual independent launch signals (Navy application), environment sensing (Air Force application), two independent arming rotor locks, automatic retard deceleration sampling, and internal self-check for arm/safe condition.

ATK's FMU-139C/B has passed the appropriate environmental tests of MIL-STD-331 and MIL-STD-801.

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FMU-139 Key Benefits

Safety

- Dual independent launch signals (Navy application)
- Environment sensing (Air Force application)
- Two independent arming rotor locks
- Automatic retard deceleration sampling
- Internal self-check for arm/safe condition

Reliability

- Advanced electronics technology
- Solid-state circuitry
- Highly reliable microcomputer
- JANTX, JAN, and MIL-STD-883/B electronic components
- Extensive testing during all production stages

Versatility

- Compatible with all U.S. Air Force, Navy, and Marine Corps aircraft
- All arming and detonation event functions included in a single fuze
- Can be used by any service, off any aircraft, with any high-explosive bomb

Performance Characteristics

Parameter	Aircraft With FFCS (Navy, Marine Corps)	Aircraft Without FFCS (Air Force, International)
Safe separation times		
– Retarded mode	2.6 seconds	2.0, 2.6, 4.0, 5.0-seconds ground selectable settings
– Nonretarded mode	5.5, 10.0-seconds cockpit selectable settings	4, 6, 7, 10, 14, 20-seconds ground selectable settings
Detonation delay times	Instantaneous cockpit selectable time. Instantaneous, 10 ms, 25 ms, 60 ms ground set delay times.	Instantaneous, 10 ms, 25 ms, 60 ms ground selectable times
Arming and/or detonation required air speed	N/A	Start at 250 kn and continue to 140 kn air speed
Power supply	FFCS at release	FZU-48/B air stream generator
Mission duration	240 seconds	5 minutes min
Weight	3.6 lb max	3.6 lb max
Length (Includes arming wire housing and connector shipping plug. Fits all standard bomb fuze wells)	6.89 in. max	6.89 in. max
Diameter	2.89 in. max	2.89 in. max
Storage life	10 yr	10 yr
Shelf life (out of shipping container)	365 days	365 days

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