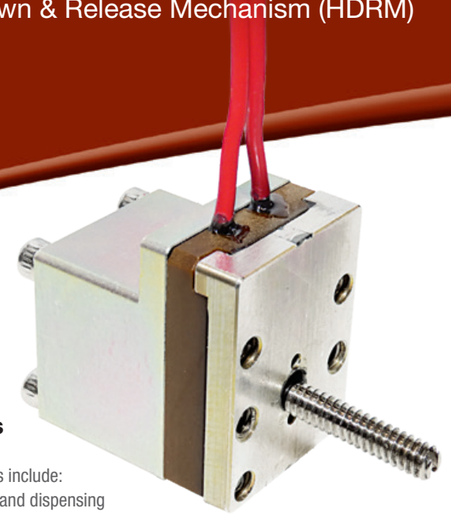
NEA® Model 9040 Miniature
Hold Down & Release Mechanism (HDRM)

Ensign-Bickford Aerospace & Defense

NEA TiNi

Mission Success

Ensign-Bickford Aerospace & Defense Company (EBAD) is dedicated to supporting our customers in the aerospace and defense industry through on-time delivery of innovative products that exceed expectations and assure mission success.



NEA® Model 9040 Miniature

EBAD is the global leader in non-pyrotechnic Hold Down & Release Mechanisms (HDRM) for the spacecraft market. HDRMs are offered in a range of sizes. The NEA® Model 9040 supports release loads up to 250 lbf (1,100 N).

Principle of Operation

The NEA® HDRM is an electrically initiated, one-shot release mechanism that can carry a preload until commanded to release. The preload is applied through a release rod held in place by two separable spool halves, which are in turn held together by tight winding of restraining wire. The restraint wire is held in place by the electrical fuse wire. When sufficient electrical current is applied, the restraint wire unwinds, allowing the spool halves to separate, releasing the release rod and the associated preload.

Applications

Typical applications include:
- CubeSat release and dispensing
- Scientific instruments
- Satellite, Spacecraft, and Payloads

Key Features

- Low cost
- Low mass
- Extremely low release shock
- Single circuit activation (not redundant)
- One-time use

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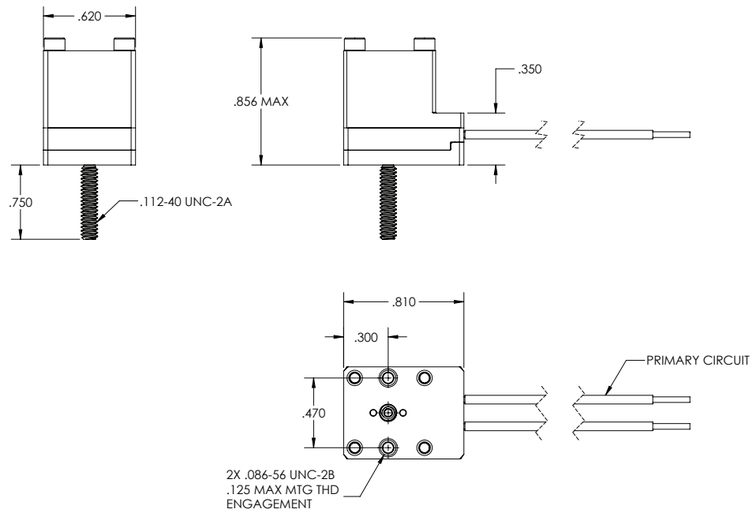
NEA® Model 9040 Miniature Technical Specifications

Parameter	Capability
Proof Load Rating	300 lbf (1,300 N)
Release Load Rating	250 lbf (1,100 N)
Output Shock @ Preload[1]	<300 g's @ 250 lbf (1,112 N)
Fuse Wire Resistance	0.8 - 1.8 Ω
Actuation Current[2]	3.0 Amps for 50 ms
No-Fire Current[3] (continuity)	250 mA
Release Time[4]	<50 ms
Temperature Range[5]	-60°C to 125°C
Maximum Angular Misalignment	3° Cone
Mass[6]	<13.6 g (.03 lbm)

Notes:
[1] Shock is preload & setup dependent, contact applications engineering for shock at other preloads.
[2] Actuation can be achieved using a range of current, the value in the table is the value for qualifying this device.
[3] No fire current for 5 minutes or less at ambient temperature, consult EBAD applications engineers for other no-fire current requirements.
[4] Release time is dependent on actuation current, preload, and temperature. Contact applications engineering for more specific information on actuation time as a function of current.
[5] The values presented for qualification temperature range are not a measure of the limits of the device.
[6] Mass does not include harnessing and lead wires.

NEA® Model 9040 Miniature Mechanical Interface Drawing (for reference)



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