

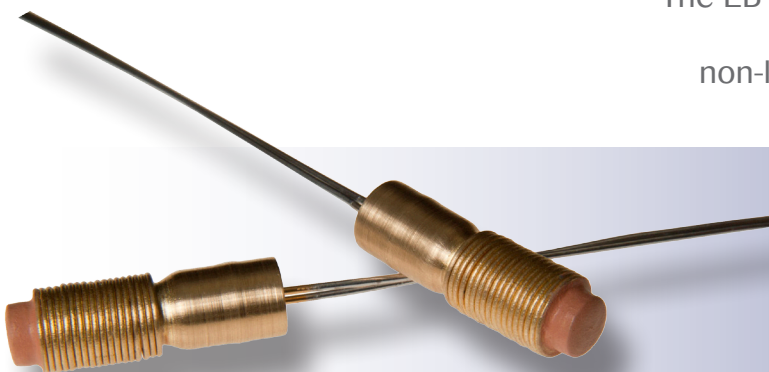
Bellows Actuators

These devices transform pyrotechnic energy into motion to perform work against an external load. Bellows actuators produce linear or rotary motion with a relatively long stroke. When actuated, the bellows expands following any straight or curved path established by surrounding surfaces, and will retain its extended position under load.

Applications include:

- Rotating a shaft
- Pushing a mechanical load
- Disconnecting a plug
- Adjusting a camera
- Arming a projectile.

EB-401-2 Bellows Actuator



The EB-401-2 Bellows Actuator is a pyrotechnic-actuated device that produces linear or non-linear motion with a relatively long stroke.

When actuated, the bellows expands following any straight, arcuate, or other path established by surrounding surfaces. It is hermetically sealed and holds its extended position under load.

Variations

Variations are possible in stroke, length, radius of curvature, force, shape of the bellows nose, firing characteristics and environmental resistance.

Characteristics

Some of the characteristics listed here are nominal; others are levels to which the units have been tested. There are no limits on design capabilities. Please consult an EaglePicher representative before using this data as a specification.

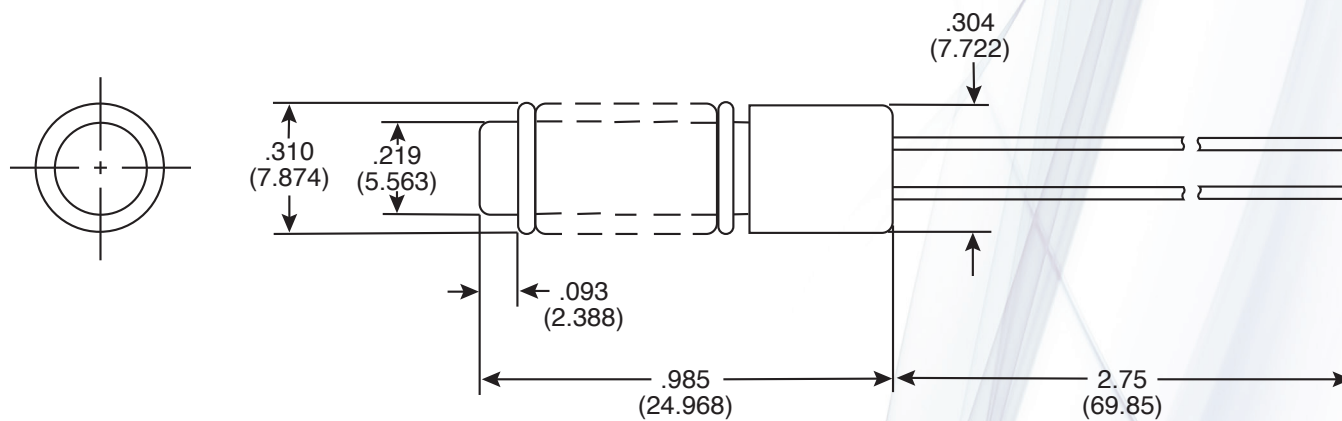
Specifications

Electrical	
Bridge Resistance @ 70°F (21°C)	7.0±2.0 ohm
All-fire Current	0.68 microfarad capacitor charged to 38.5 ± 0.5 Vdc (5000 erg minimum).
Insulation Resistance @ 500 Vdc, Shunted Leads to Case, Before Firing	100 megohms

Specifications Continued

Mechanical	
Size	See drawing
Weight	5 gm Max.
Stroke Length	5/8"
Output	4 in-lb torque @ 55° (900-1900 RPM)
Function Time	25.0 ms Max.
Environmental	
Temperature	Operating range: -65°F to +160°F (-54°C to +70°C) Temperature and humidity: 28 days per MIL-STD-331, Test No. 105.1
High Frequency Vibration	10-2000-10Hz, d.a. 0.15" (3.81 mm), 30 min/cycle, 1 cycle/plane, 3 mutually perpendicular planes.
Low-Frequency Vibration	MIL-STD-331, Test B1, para. B1.6.12
Jolt	MIL-STD-331, Test A1 para. A 1.2
Drop	40-ft-drop test, 3 axes
Chemical	
Energetic Compounds	Lead Styphnate LMNR/Black Powder
Freight Classification	
Shipping Name	Bellows Actuator
Hazard Classification	Unregulated

EB-401-2



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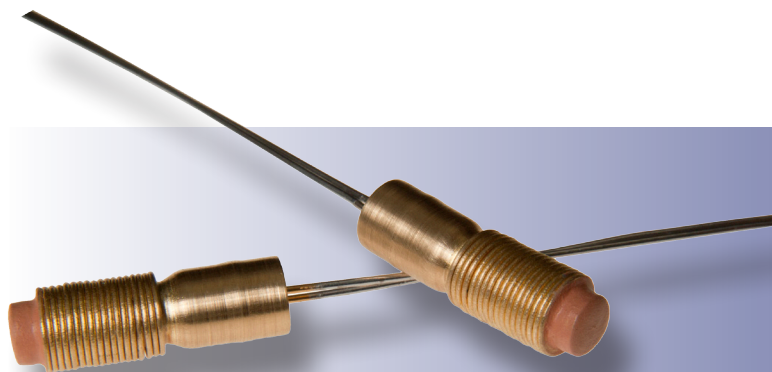


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EB-401-3 Bellows Actuator



The EB-401-3 Bellows Actuator is a pyrotechnic-actuated device.

The EB-401-3 produces linear or non-linear motion with a relatively long stroke. When actuated, the bellows expand following any straight, arcuate, or other path established by surrounding surfaces. It is hermetically sealed and holds its extended position under load.

Variations

Variations are possible in stroke, length, radius of curvature, force, shape of the bellows nose, firing characteristics and environmental resistance.

Characteristics

Some of the characteristics listed here are nominal; others are levels to which the units have been tested. There are no limits on design capabilities. Please consult an EaglePicher representative before using this data as a specification.

Specifications

Electrical	
Bridge Resistance @ 70°F (21°C)	7.0±2.0 ohm
All-fire Current	0.68 ± 1% microfarad capacitor charged to 38.5 ± 0.5 Vdc (5000 erg Max.)
Insulation Resistance @ 500 Vdc, Shunted Leads to Case Before Firing	100 megohms Min.

Specifications Continued

Mechanical	
Size	See Drawing
Weight	5 gm Max.
Stroke Length	1.0" (25.4 mm)
Output	30 in-lb (34 N-m) torque @ 15° 4 in-lb (17 N-m) torque @ 70°
Function Time	25.0 ms Max.
Environmental	
Temperature	Operating range: -65°F to +160°F (-54°C to +70°C) Temperature and humidity: 28 days per MIL-STD-331, Test No. C1
High Frequency Vibration	10-2000-10Hz, d.a. 0.06" 20 min/cycle, 3 cycles/plane 3 mutually perpendicular planes
Low-Frequency Vibration	MIL-STD-331, Test B1 at room temperature in the vertical and horizontal planes.
Jolt	MIL-STD-331, Test A1
Drop	MIL-STD-331, Test A3
Chemical	
Energetic Compounds	Lead Styphnate LMNR/Black Powder
Freight Classification	
Shipping Name	Bellows Actuator
Hazard Classification	Unregulated

EB-401-3

Safety

Maximum pyrotechnic weight:

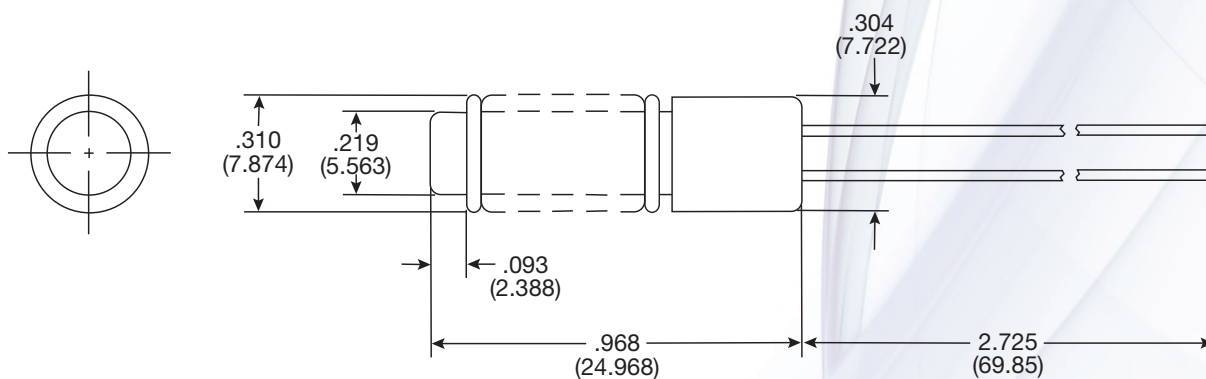
75mg

Warning:

The EB-401-3 Bellows Actuator is hermetically sealed and will not rupture when fired under normal test conditions. It may fire if exposed to temperatures above 200°F (93°C), or an electrical charge exceeding the specified no-fire current.

If your company does not have a safety program, it is essential that one is established before explosive items are handled or used. For a brief overview of safety precautions, see the Safety Procedures Data Sheet or contact an EaglePicher representative.

Energetic devices are considered articles; therefore a Material Safety Data Sheet (MSDS) does not apply. However, MSDS may apply to individual components. For more information, contact your EaglePicher representative.



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1MT1106 Bellows Actuator

The 1MT1106 Bellows Actuator is a pyrotechnic-actuated device that produces linear or non-linear motion with a relatively long stroke.

It is larger and more powerful than most bellows actuators. When actuated, the bellows expands following a straight line, arcuate, or other path established by surrounding surfaces. It holds its extended position under load.

Variations

Variations are possible in firing characteristics, environmental resistance, length of stroke, force, radius of curvature and shape of bellows nose.

Characteristics

Some of the characteristics listed here are nominal; others are levels to which the units have been tested. There are no limits on design capabilities. Please consult an EaglePicher representative before using this data as a specification.

Specifications

Electrical

Bridge Resistance @ 70°F (21°C)	4.5 ± 0.5 ohm
All-fire Current @ -65°F (-54°C)	1.0 amp, 10 ms
No-Fire Current @ 160°F (71°C)	0.050 amp, 30 sec
Insulation Resistance @ 500 Vdc, Shunted Leads to Case, Before Firing	30 megohms Min.

Mechanical

Bellows Material	Brass
Size	See drawing
Weight	16 gm
Output and Function Time	Will overcome a 50 lb (224 N) detent and extend 1 1/2" (38.1 mm) against a 5 lb spring in 20 ms Max.

Environmental

Temperature	Operating range: -65°F to +160°F (-54°C to +71°C) Temperature and humidity: MIL-STD-331, Test No. C1
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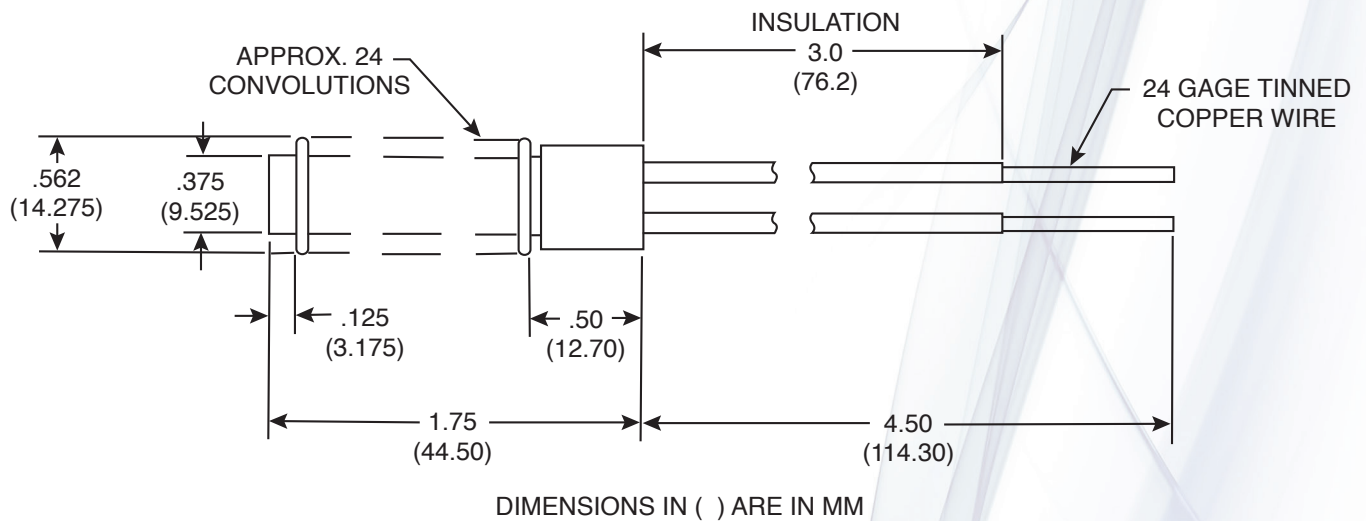
Chemical

Ignition Compound	LMNR/KClO ₃
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Freight Classification

Shipping Name	Release Devices, Explosive
Hazard Classification	1.4S

1MT1106



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