

Retractable Actuators

Retractable actuators produce a pulling or withdrawing type of linear motion. When actuated, a piston partially retracts into the casing and locks into place.

Applications include:

- Pulling mechanical loads
- Locking, unlocking or releasing
- Operating a switch, latch, or relay.

1MT18 Retractable Actuators



The 1MT18 Retractable Actuator is a pyrotechnic-actuated device that produces a pulling or withdrawing type of linear motion.

Upon firing, the piston partially retracts into the casing. These devices are extremely small and lightweight with high reliability. For initiation, they require just a fraction of a watt for a few milliseconds.

Variations

The 1MT18 illustrates the wide range of variations that are possible with the retractable actuator design. Modifications can be made in shape, size, mounting features, firing sensitivity, output, post-fire piston extension and pre-fire pushback force.

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

Squib	Bridge Resistance* @70°F (21°C)	All-Fire Current @ -65°F (-54°C) 10 ms	No-Fire Current @ 160°F (71°C) 5 min
Type	Ohm	Amp, Min.	Amp, Min.
A	6.0 ± 1.0	0.30	0.04
B	4.5 ± 0.5	0.55	0.10
C	1.8 ± 0.2	1.00	0.10
F	0.12 ± 0.03	4.50	1.00
G	25.0 ± 5.0	0.10	0.01
Insulation Resistance, Leads to Case, Before Firing	50 megohm Min. @ 500 Vdc		

*Test current limited to 0.010 amp

All 1MT18 actuators are available with a dual bridge 4-pin variation.

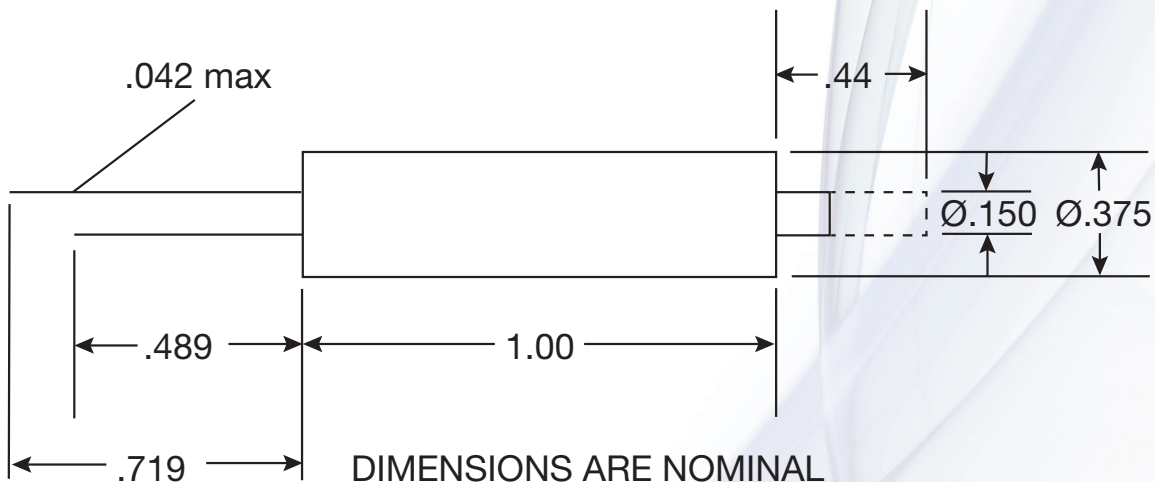
1MT18

Specifications Continued

Mechanical	
Size	See drawing
Weight, Max.	12 gm
Stroke	> .290 (7.54 mm)
Force	20 lb (89 N)
Holding Force	-
Seal, Leads to Case	Solder
Function Time, Max.	10 ms
Environmental	
Temperature	Operating range: -65° to +160°F (-54° to +71°C) Cycle: MIL-STD-202, Method 102A, Test Cond. D
Humidity	Cycle: MIL-STD-202, Method 103A, Test Cond. B
Vibration	Sinusoidal: 0.34" (8.64 mm) d.a. or 30 g's 5-2000-5 Hz, 3 axes Transportation: MIL-STD-303, 3 axes
Shock	300 g's, 3 ms, 1/2 sine wave, 3 axes
Jumble	MIL-STD-331, Test 102.1
Jolt	MIL-STD-331, Test 101.2
Drop	40-ft-drop test, 3 axes

Specifications Continued

Chemical	
Ignition Compound	KDNBF
Base Charge	LMNR/KClO ₃
Freight Classification	
Shipping Name	Release Devices, Explosive
Identification Number	UN0173
Hazard Classification	1.4S



EaglePicher Technologies, LLC

PO Box 47, Joplin, Missouri 64802-0047, USA
tel 417.623.8000 | fax 417.623.0850
www.eaglepicher.com

1MT262M1 Retractable Actuator

The 1MT262M1 Retractable Actuator is a pyrotechnic-actuated device that produces a pulling or withdrawing type of linear motion.



Upon firing, the piston partially retracts into the casing. These devices are extremely small and lightweight with high reliability. For initiation, they require just a fraction of a watt for a few milliseconds.

Variations

The 1MT262M1 illustrates one of the wide ranges of variations that are possible with the retractable actuator design. Modifications can be made in shape, size, mounting features, firing sensitivity, output, post-fire piston extension and pre-fire pushback force.

NOTE: The 1MT262 series devices replace the 1MT165 series.

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

Actuator	Bridge Resistance* @70°F (21°C)	All-Fire Current @ -65°F (-54°C) 10 ms	No-Fire Current @ 160°F (71°C) 5 min
Part No.	Ohm	Amp, Min.	Amp, Min.
1MT262M1	6.0 ± 1.0	0.30	0.03
Insulation Resistance, Leads to Case, Before Firing	20 megohm Min. @ 300 Vdc		
All-Fire Current	4.7 microfarad capacitor charged to 17.1 ± .5 Vdc (5000 erg minimum)		

*Test current limited to 0.010 amp

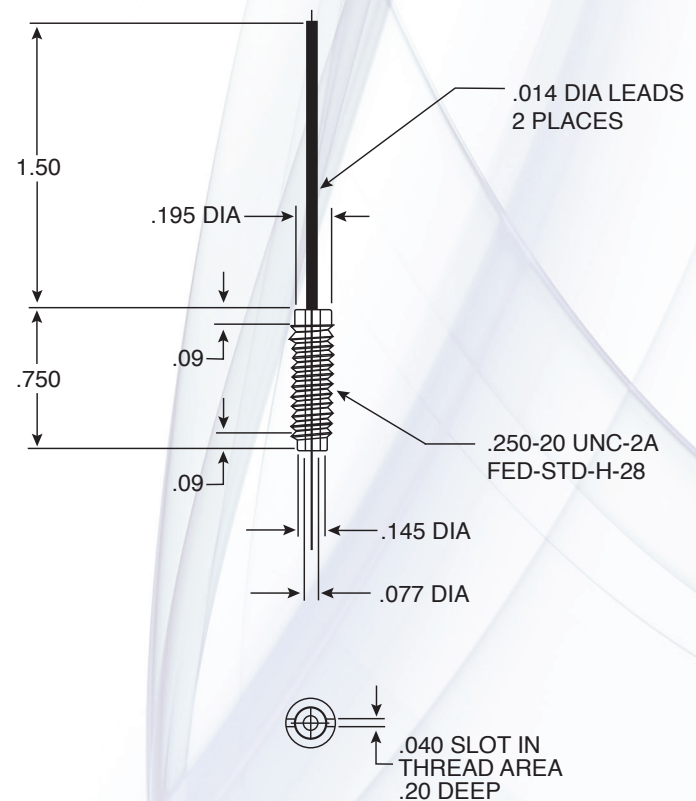
1MT262M1

Specifications Continued

Mechanical	
Size	See drawing
Weight, Max.	1 gm Max.
Stroke	1/8" (3.18 mm) nominal
Side Force	1.0 lb (4.4 N)
Holding Force	2.0 lb (8.9 N) min
Seal, Leads to Case	epoxy
Function Time, Max.	10 ms
Environmental	
Temperature	Operating range: -65° to +160°F (-54° to +71°C) Cycle: MIL-STD-202, Method 102A, Test Cond. D
Humidity	Cycle: MIL-STD-202, Method 103A, Test Cond. B
Vibration	Sinusoidal: 30 g's 5-2000-5 Hz, 3 axes per MIL-STD-202, Method 204 Transportation: MIL-STD-331, Test B
Shock	300 g's, 3 ms, 1/2 sine wave, 3 axes

Specifications Continued

Chemical	
Ignition Compound	Lead Styphnate/ Barium Styphnate
Freight Classification	
Shipping Name	Release Devices, Explosive
Identification Number	UN0173
Hazard Classification	1.45



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1MT262M2 Retractable Actuator

The 1MT262M2 Retractable Actuator is a pyrotechnic-actuated device that produces a pulling or withdrawing type of linear motion.



Upon firing, the piston partially retracts into the casing. These devices are extremely small and lightweight with high reliability. For initiation, they require just a fraction of a watt for a few milliseconds.

Variations

The 1MT262M2 illustrates one of the wide range of variations that are possible with the retractable actuator design. Modifications can be made in shape, size, mounting features, firing sensitivity, output, post-fire piston extension and pre-fire pushback force.

NOTE: The 1MT262 series devices replace the 1MT165 series.

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

Actuator	Bridge Resistance* @70°F (21°C)	All-Fire Current @ -65°F (-54°C) 10 ms	No-Fire Current @ 160°F (71°C) 5 min
Part No.	Ohm	Amp, Min.	Amp, Min.
1MT262M2	6.0 ± 1.0	0.30	0.03
Insulation Resistance, Leads to Case, Before Firing	20 megohm Min. @ 300 Vdc		
All-Fire Current	4.7 microfarad capacitor charged to 17.1 ± .5 Vdc (5000 erg minimum)		

*Test current limited to 0.010 amp

1MT262M2

Specifications Continued

Mechanical	
Size	See drawing
Weight, Max.	1 gm Max.
Stroke	1/8" (3.18 mm)
Side Force	1.0 lb (4.4 N)
Holding Force	2.0 lb (8.9 N) Min.
Seal, Leads to Case	epoxy
Function Time, Max.	10 ms
Environmental	
Temperature	Operating range: -65° to +160°F (-54° to +71°C) Cycle: MIL-STD-202, Method 102A, Test Cond. D
Humidity	Cycle: MIL-STD-202, Method 103A, Test Cond. B
Vibration	Sinusoidal: 9 G peak, MIL-STD-202, Method 204, Condition E 10-2000-10 Hz, 3 axes Transportation: MIL-STD-303, 3 axes
Shock	18 shocks, 2,000 g's, .5 ms, JAW MIL-STD-202, Method 213, Test condition E

Specifications Continued

Chemical	
Ignition Compound	Lead Styphnate/ Barium Styphnate
Freight Classification	
Shipping Name	Not regulated as a Class 1 explosive
Identification Number	UN0173
Hazard Classification	1.4S



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1MT262M3 Retractable Actuator

The 1MT262M3 Retractable Actuator is a pyrotechnic-actuated device that produces a pulling or withdrawing type of linear motion.



Upon firing, the piston partially retracts into the casing. These devices are extremely small and lightweight with high reliability. For initiation, they require just a fraction of a watt for a few milliseconds.

Variations

The 1MT262M3 illustrates one of the wide range of variations that are possible with the retractable actuator design. Modifications can be made in shape, size, mounting features, firing sensitivity, output, post-fire piston extension and pre-fire pushback force.

NOTE: The 1MT262 series devices replace the 1MT165 series.

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

Actuator	Bridge Resistance* @70°F (21°C)	All-Fire Current @ -50°F (-45°C) 10 ms	No-Fire Current @ 140°F (60°C) 5 min
Part No.	Ohm	Amp, Min.	Amp, Min.
1MT262M3	4.0 ± 1.0	0.55	0.10
Insulation Resistance, Leads to Case, Before Firing	50 megohm Min. @ 500 Vdc		

*Test current limited to 0.010 amp

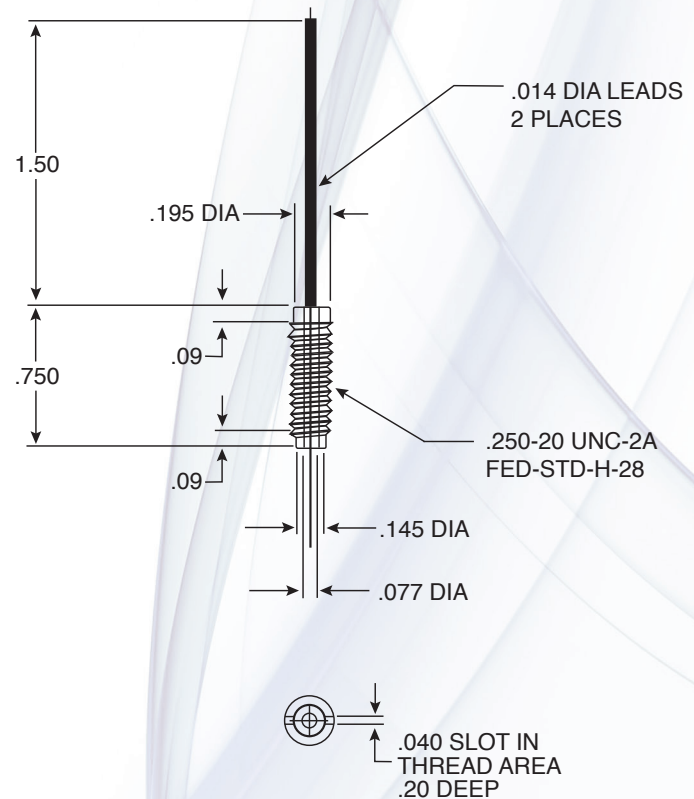
1MT262M3

Specifications Continued

Mechanical	
Size	See drawing
Stroke	1/8" (3.18 mm)
Seal, Leads to Case	epoxy
Function Time, Max.	10 ms
Environmental	
Temperature	Operating range: -50° to +140°F (-54° to +71°C) Cycle: MIL-STD-202, Method 102A, Test Cond. D
Humidity	Cycle: MIL-STD-202, Method 103A, Test Cond. B
Vibration	Sinusoidal: 0.40 ² double amplitude 5 g's 5-500-5 Hz, 3 axes Transportation: MIL-STD-303, 3 axes
Shock	150 g ³ peak IAW MIL-STD-202, Method 213, Condition A
Jumble	MIL-STD-331, Test 102.1
Jolt	MIL-STD-331, Test 101.2

Specifications Continued

Chemical	
Ignition Compound	LMNR/KClO ₃
Freight Classification	
Shipping Name	Release Devices, Explosive
Identification Number	UN0173
Hazard Classification	1.4S



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