

# APECS 0275

## Linear Actuators



### APPLICATIONS

APECS 0275 linear actuators provide proportional fuel control for construction, industrial, and agricultural equipment.

- Speed governing
- Generator sets
- Forklift trucks
- Power carts
- Off-road vehicles
- Pump sets
- Pleasure boats
- Wood chippers

### DESCRIPTION

APECS 0275 linear actuators deliver precise positioning and form the foundation of a full electronic governing system. Many of the moving parts normally associated with electric actuators are eliminated, prolonging the MTBF (mean time between failure).

The actuator design employs the principle of variable reluctance for consistent force over the entire stroke. This simple design of a proportional electric linear actuator utilizes a sliding armature whose magnetic force is proportional to the input coil current.

These actuators are easy to install by mounting near the fuel system and direct connecting to the fuel control rod or lever. In most installations, the normal rotary-to-rotary connection is eliminated, resulting in a more trouble-free and accurate control system.

APECS 0275 actuators are suitable for installation on diesel, gasoline, or natural gas engines with fuel system force requirements of less than 13 pounds (57.8 N) of force.

- Ball bearing design for reduced friction, resulting in more precise engine control
- Fast response
- Designed to minimize heat buildup, resulting in consistent force and improved position repeatability
- Small & compact
- Push or pull actuation
- Spring return to minimum fuel
- Mounts in any position
- Precise repeatability
- Meets INR & EMP for moderate tactical battlefield environment
- 2-bolt, 4-bolt, and base mount flanges for drop-in replacement of DYNA 2500 actuators

# SPECIFICATIONS

## Electrical

<b>Input Voltage Range:</b>	<b>12 Vdc</b>	<b>24 Vdc</b>
<b>Nominal Steady State Current:</b>	2.5 A	1.0 A
<b>Maximum At Stall</b>		
<b>@ 75°F (24°C):</b>	5.9 A	3.0 A
<b>@ 250°F (125°C):</b>	4.2 A	2.0 A

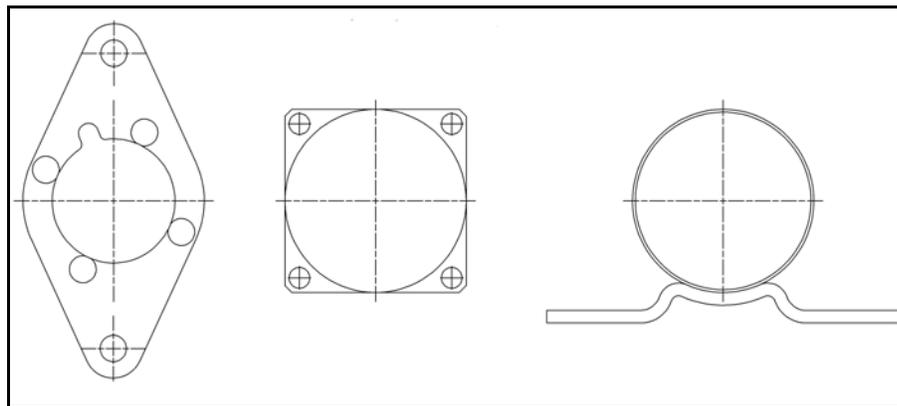
## Performance

<b>Resistance</b>	
<b>12 Vdc:</b>	1.4 Ohm
<b>24 Vdc:</b>	7.3 Ohm
<b>Force w/o Internal Spring:</b>	13 lbf (57.8 N)
<b>Work w/o Spring:</b>	1.08 ft-lb (1.47 N*m)
<b>Shaft Travel:</b>	0.975-1.025" (24.76-26.03 mm)
<b>Response Time</b>	0.05 sec ON Time
<b>Nominal for 63% of Stroke:</b>	0.035 sec OFF Time

## Environmental

<b>Operating Temperature:</b>	-65°F to +250°F (-55°C to +125°C)
<b>Vibration:</b>	5 to 500 Hz Curve L per Mil-Std 810C
<b>Case:</b>	Corrosion resistant, plated steel housing and mounting base/flange
<b>Sealing:</b>	Oil, water, and dust resistant
<b>Weight:</b>	4 lbs (1.81 kg)

# MOUNTING OPTIONS



**2-Hole Flange**  
**[A]**

**4-Hole Flange**  
**[D]**

**Base Mount**  
**[E]**

**APECS 0275 Linear Actuators**

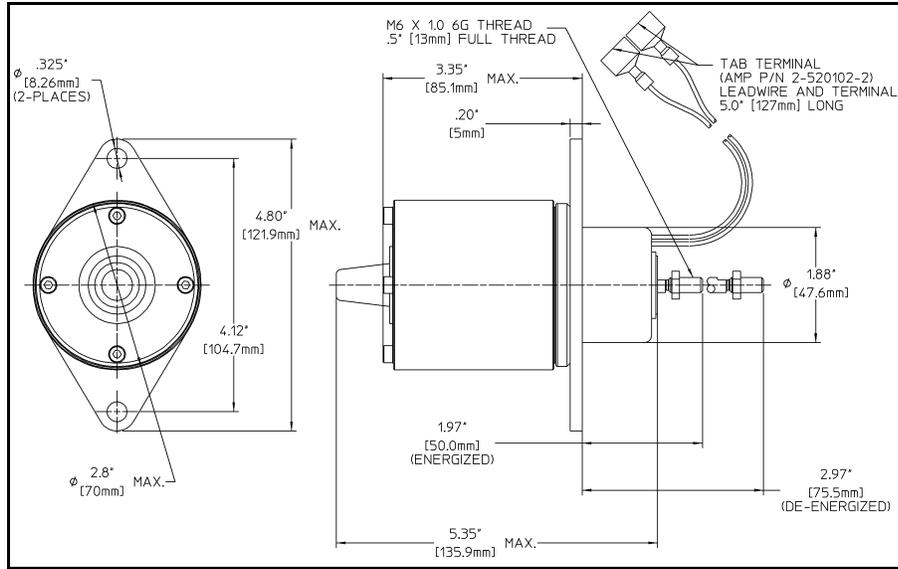
PART NO.	ACTUATION		VOLTAGE		MOUNTING STYLE			PLUNGER TYPE	TERMINATION	RETURN SPRING*
	Push	Pull	12 V	24 V	2-Hole Flange	4-Hole Flange	Base	External M-6 Thread	Connector	S3
†	[P]		[12]	[24]	[A]	[D]	[E]	[3]	[C]	[S3]
8275-1001	•		•			•		•	•	•
8275-1002	•			•		•		•	•	•
8275-1003		•	•				•	•	•	•
8275-1004		•		•			•	•	•	•
8275-1005	•		•				•	•	•	•
8275-1006	•			•			•	•	•	•
8275-1007		•	•		•			•	•	•
8275-1008		•		•	•			•	•	•
8275-1009	•		•		•			•	•	•
8275-1010	•			•	•			•	•	•
8275-1011		•	•			•		•	•	•
8275-1012		•		•		•		•	•	•

† Copy in brackets [ ] is model number description. For example: Part No. 8275-1001 is Model Number 0275P-12D3CS3.

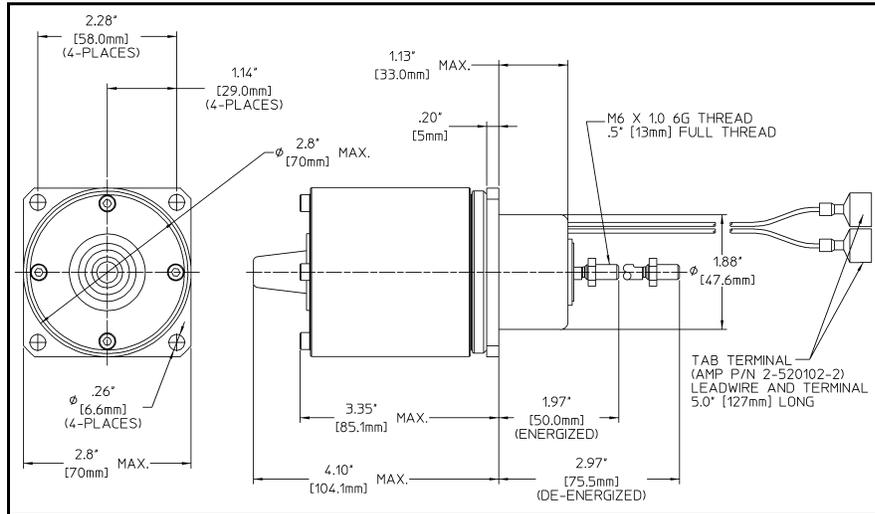
**\* Spring Chart**

SPRING TYPE	PART NO.	DE-ENERGIZED SPRING FORCE	ENERGIZED SPRING FORCE	SPRING RATE
S3	1520-1114	2 lb (8.9 N)	13.4 lb (59.6 N)	11.36 lb/in (0.21 kg/mm)

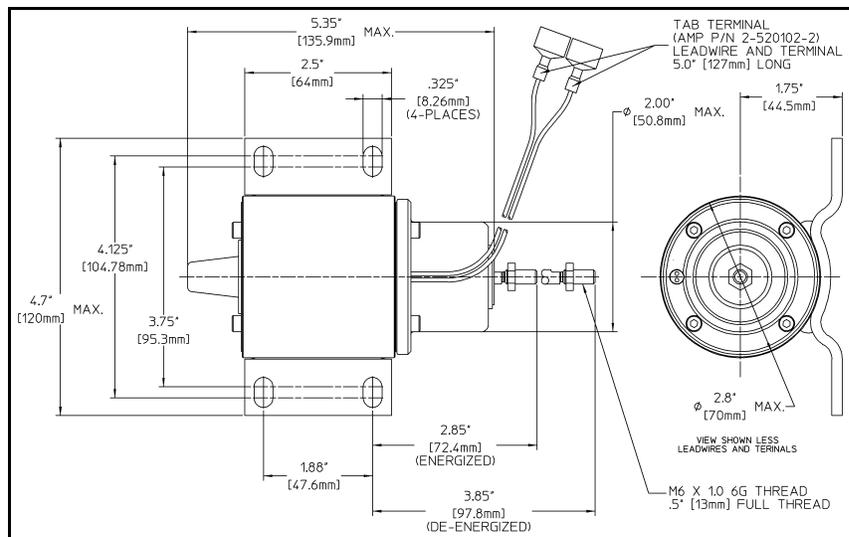
# DIMENSIONS



**Figure 1. Two-Hole Flange Pull Type Actuator**

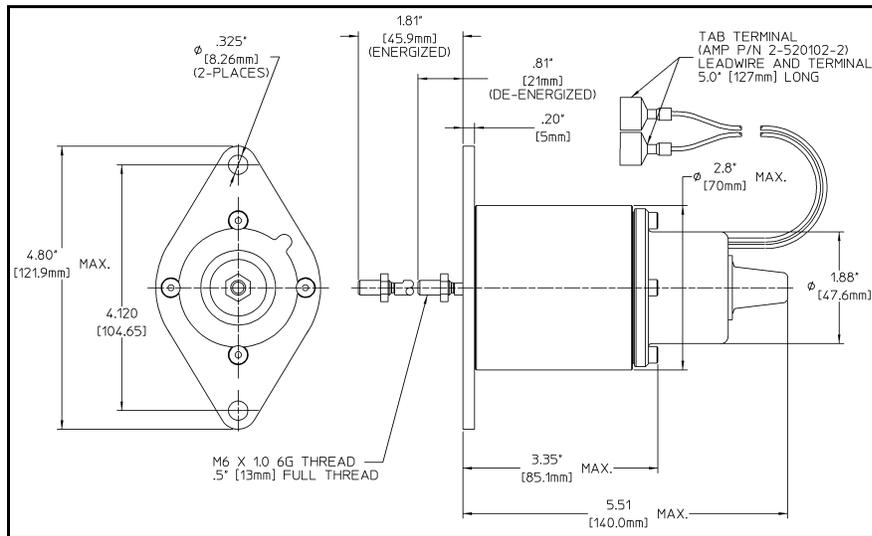


**Figure 2. Four-Hole Flange Pull Type Actuator**

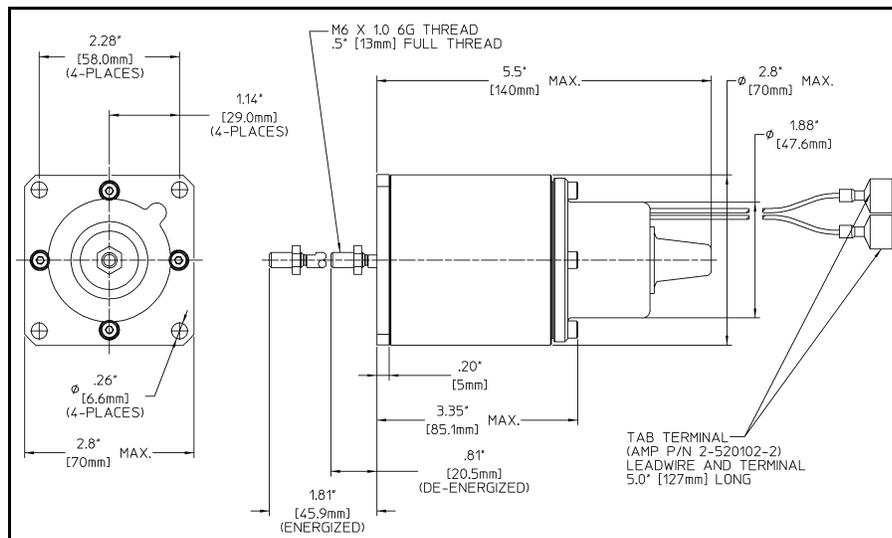


**Figure 3. Base Mount Pull Type Actuator**

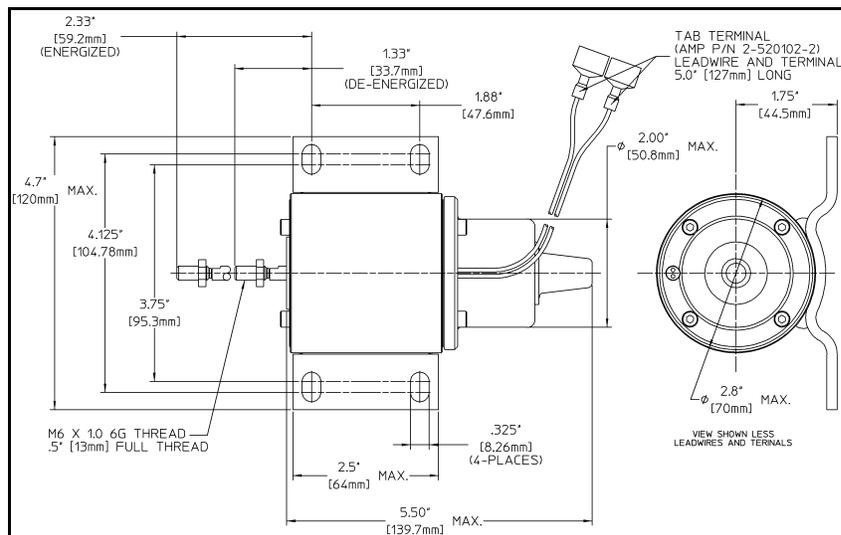
# DIMENSIONS



**Figure 4. Two-Hole Flange Push Type Actuator**



**Figure 5. Four-Hole Flange Push Type Actuator**



**Figure 6. Base Mount Push Type Actuator**

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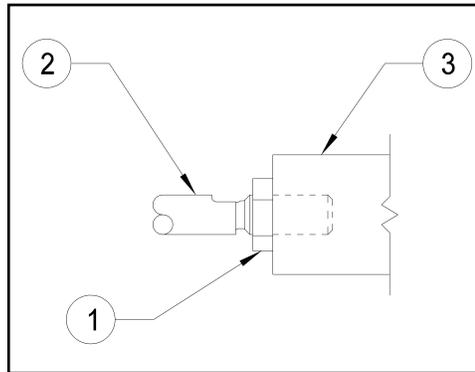
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## Installation

The 0225 linear actuator mounts easily near the fuel system and direct connects to the fuel control rod or lever. Refer to **Figure 2** to install.

1. Use 5mm wrench flat (2) to hold shaft from turning during assembly.
2. Torque the M-6 shaft nut (1) 2 ft-lbs against mating linkage (3).
3. Be sure linkage is free from binds and interference.
4. Use properly designed hardware and brackets for your specific application. Use manufacturer's recommended crimper (AMP).

NOTE: AMP mating receptacle connector part numbers: 2-520184-2 or 3-350820-2



**Figure 2**



**WARNING—OVERSPEED PROTECTION**

An overspeed shutdown device, independent of the APECS system, should be provided to prevent loss of engine control that may cause personal injury or equipment damage.

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