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› Progressive Automations PA-MC1 12V Micro Linear Actuator User Manual

## PROGRESSIVE AUTOMATIONS PA-MC1

# Progressive Automations PA-MC1 12V Micro Linear Actuator User Manual

Model: PA-MC1 (0.5" Stroke, 8 lbs Force)

### 1. PRODUCT OVERVIEW

The Progressive Automations PA-MC1 is a compact 12V micro linear actuator designed for precise linear motion in various applications. This specific model features an 0.5-inch stroke length and an 8 lbs force capacity. Its robust construction and IP65 rating ensure reliable performance even in challenging environments, making it suitable for food and beverage processing, home automation, and general automation tasks.



*Image: The PA-MC1 Micro Linear Actuator, a compact device for linear motion.*

Key features include a low current draw, compact size, and high protection against dust and water ingress. The brushed DC electric motor provides efficient operation, and options for potentiometer feedback allow for enhanced control.



*Image: The PA-MC1 Micro Linear Actuator held in a hand, illustrating its compact form factor.*

## 2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the PA-MC1 linear actuator. Failure to follow these instructions may result in injury or damage to the product.

- **Electrical Safety:** Ensure the power supply is disconnected before making any electrical connections. Use only a 12VDC power source. Incorrect voltage can damage the actuator.
- **Pinch Points:** Keep hands and other body parts clear of the actuator's moving parts during operation to prevent pinching or crushing injuries.
- **Load Capacity:** Do not exceed the rated force capacity of 8 lbs. Overloading can lead to premature failure and potential safety hazards.
- **Mounting:** Securely mount the actuator using appropriate hardware. Loose mounting can cause instability and operational issues.
- **Environment:** While the actuator has an IP65 rating, avoid submerging it in liquids or exposing it to extreme temperatures beyond its operating range.

## 3. WHAT'S IN THE BOX

The package for the PA-MC1 Micro Linear Actuator typically includes:

- One (1) Progressive Automations PA-MC1 Micro Linear Actuator

*Note: Mounting brackets, power supply, and control systems are sold separately.*

## 4. SETUP

### 4.1 Mounting

The PA-MC1 actuator features mounting holes at both ends for secure installation. Ensure the mounting surface is stable and capable of supporting the actuator's weight and operational forces. Use appropriate bolts or screws for your application.



*Image: A close-up view of the mounting eyelet on the PA-MC1 actuator.*

## 4.2 Electrical Connections

The PA-MC1 operates on 12VDC. It typically has two wires for power connection. Reversing the polarity of the input voltage will reverse the direction of the actuator's movement (extend or retract).

- Connect the positive (+) lead from your 12VDC power supply to one wire of the actuator.
- Connect the negative (-) lead from your 12VDC power supply to the other wire of the actuator.
- To reverse direction, swap the positive and negative connections.

For advanced control, such as precise positioning, the PA-MC1 may offer potentiometer feedback options. Refer to the specific wiring diagram provided with your control system for these connections.

## 5. OPERATING INSTRUCTIONS

Once properly mounted and wired, the PA-MC1 actuator is ready for operation.

- **Extension/Retraction:** Apply 12VDC power to the actuator. The direction of movement (extend or retract) depends on the polarity of the applied voltage.
- **Stopping:** Remove power to the actuator to stop its movement. The actuator will hold its position when power is removed, provided the load does not exceed its static load rating.
- **Control Systems:** The low current draw of the PA-MC1 allows for compatibility with most standard linear actuator control systems. Consult your control system's manual for integration details.



*Image: The PA-MC1 Micro Linear Actuator shown in its fully extended position.*

## 6. MAINTENANCE

The PA-MC1 linear actuator is designed for minimal maintenance. Regular inspection can help ensure its longevity and optimal performance.

- **Cleaning:** Periodically wipe down the exterior of the actuator with a damp cloth to remove dust and debris. Avoid using harsh chemicals.
- **Connections:** Check electrical connections regularly to ensure they are secure and free from corrosion.

- **Mounting:** Verify that mounting points remain tight and secure.
- **Environmental Protection:** The IP65 rating provides protection against dust and low-pressure water jets. While durable, avoid direct high-pressure washing or prolonged submersion.

## 7. TROUBLESHOOTING

If your PA-MC1 actuator is not functioning as expected, consider the following:

Problem	Possible Cause	Solution
Actuator does not move	No power, incorrect wiring, overloaded	Check power supply, verify wiring polarity, reduce load
Actuator moves erratically	Loose connections, insufficient power, internal damage	Secure connections, ensure stable 12VDC supply, contact support if problem persists
Actuator makes unusual noise	Overload, internal wear, foreign object	Reduce load, inspect for obstructions, contact support
Actuator stops prematurely	Overload, end-limit switch triggered (if applicable)	Reduce load, check for obstructions, verify end-limit switch operation

If troubleshooting steps do not resolve the issue, please contact Progressive Automations customer support for further assistance.

## 8. SPECIFICATIONS

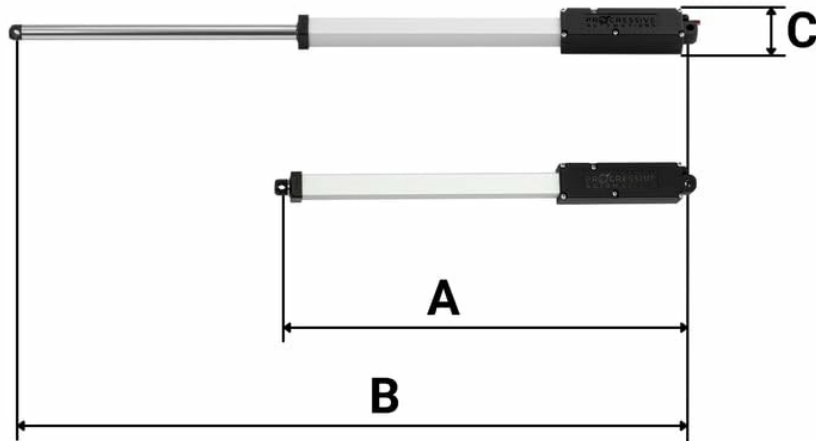
Detailed specifications for the Progressive Automations PA-MC1 Micro Linear Actuator (0.5" Stroke, 8 lbs Force variant):

Feature	Value
Model	PA-MC1
Operating Voltage	12VDC
Force Capacity	8 lbs
Stroke Length	0.5 inches
Speed (unloaded)	1.85 inches/second
Protection Rating	IP65 (Dust tight, protected against low-pressure water jets)
Motor Type	Brushed DC Electric Motor
Feedback Options	Potentiometer (optional)
Package Dimensions	4.72 x 1.18 x 0.98 inches
Weight	4.64 ounces

# PA-MC1

## Linear Actuator Dimensions

Voltage	Force
12VDC	8; 11; 17; 39 lbs



Stroke (in)	0.5	1	2	4	6	8
A	3.26	3.76	4.76	6.76	8.76	10.76
B	3.76	4.76	6.76	10.76	14.76	18.76
C	0.79	0.79	0.79	0.79	0.79	0.79

Image: Diagram illustrating the dimensions of the PA-MC1 Linear Actuator for various stroke lengths.

## 9. WARRANTY AND SUPPORT

Progressive Automations is committed to providing high-quality products. Our manufacturing processes are ISO 9001:2015 certified, ensuring continuous improvement in product quality and customer satisfaction.

For specific warranty details, technical support, or inquiries, please visit the official Progressive Automations website or contact their customer service department. You can also find more information and products at the [Progressive Automations Store on Amazon](#).

