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PA-HD3B

User Manual

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Have any queries? Our expert engineers are here to help!



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SAFETY PRECAUTIONS

When installing and using your Progressive Automations linear actuator, basic safety precautions should always be followed. Please read all safety precautions thoroughly and be familiar with all functions of the product before use. Apply all other relevant precautions when operating electrical and moving mechanical devices.



DANGER

To reduce the risk of electrical shock and injuries:

- Do not attempt to modify or repair the actuator.
- Avoid using the actuator in environments with explosive gases or flammable materials.
- Avoid using the actuator beyond its specified Ingress Protection rating.
- Make sure that the power source is properly grounded. Neglecting proper grounding can result in a dangerous electrical hazard.



WARNING

To reduce personal harm and injury:

- Follow recommended load ratings and specifications for the actuator.
- Avoid leaving the actuator unattended during operation.
- Avoid operating the actuator in areas with high levels of airborne contaminants.
- Ensure a clear path for full extension and retraction of the actuator.
- Keep hands and body parts clear of the actuator while it is in motion.
- Exercise caution around pinch points and moving components during the actuator's operation.
- Keep all loose clothing, jewelry, and personal items away from the actuator's moving parts.

OPERATING NOTES

Warranty

Any attempts to disassemble or tamper with the actuator's internal components or operation outside of the advertised usage limitations will result in voiding the product's warranty. For more information on our warranty terms, visit:

<https://www.progressiveautomations.com/pages/warranty-terms>

Force Restrictions

Linear actuators must be used within the specified force rating outlined in this documentation. Load must be evenly distributed. Exceeding the recommended force rating may result in failure of the linear actuator. It may also damage the product and void the warranty. Please note that the weight of the load does not always equal the total force due to mechanical advantage, wherein the force may increase or decrease depending on the application.

Operation Time

Linear actuators must be operated within the specified operation time and frequency. Exceeding the duty cycle rating can significantly reduce the actuator's expected lifespan and will void the warranty.

SPECIFICATIONS

RATED LOAD CONFIGURATIONS

Rated Load (lbf)		12 VDC Current (A)		24 VDC Current (A)		12 VDC Speed ¹ (inch/sec)		24 VDC Speed ¹ (inch/sec)	
Dynamic	Static	No Load	Full Load	No Load	Full Load	No Load	Full Load	No Load	Full Load
1124	1798	3.5	22.0	1.75	11.0	1.10	0.79	1.10	0.79
1686	2248	3.0	22.0	1.50	11.0	0.71	0.51	0.71	0.51
2248	2698	3.0	22.0	1.75	11.0	0.55	0.35	0.55	0.35
3035	3372	2.5	22.0	1.0	11.0	0.35	0.26	0.35	0.26
3822	4496	4.0	17.3	1.0	11.0	0.26	0.20	0.26	0.20

¹Speed specifications have a $\pm 10\%$ tolerance.

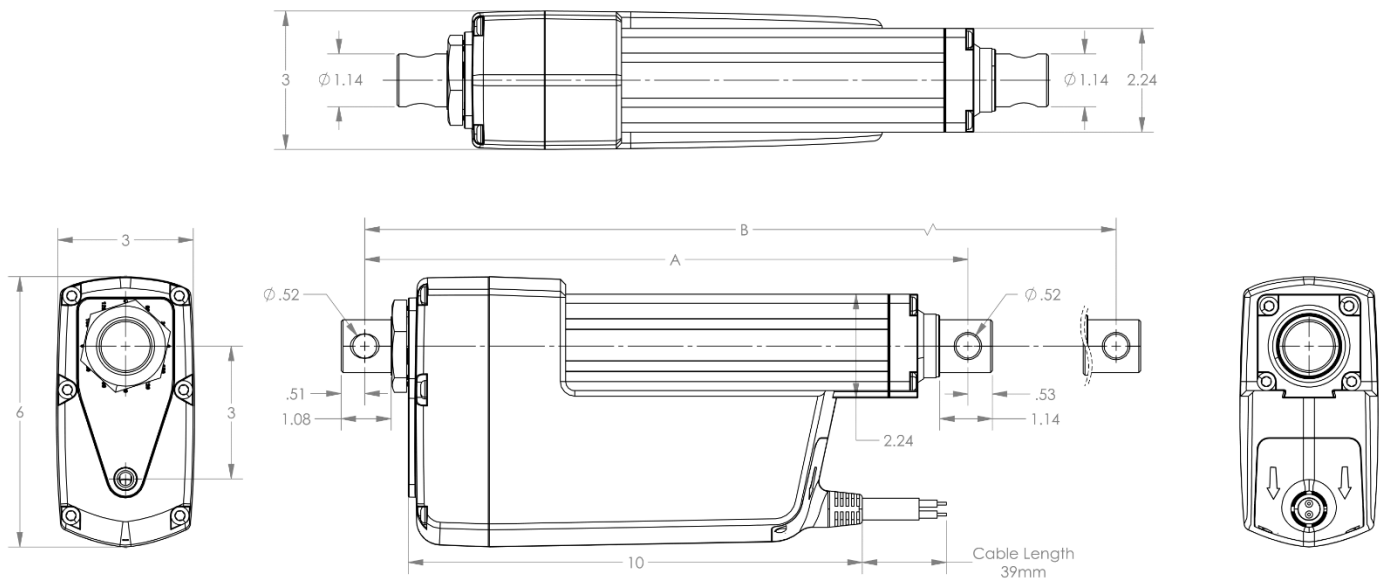
SPECIFICATIONS

Input Voltage	12 VDC or 24 VDC
Stroke	4" to 24" available for 3822 lbs and 3055 lbs options (4" to 40" available for all other models)
Features	Manual Override
Feedback	None, Hall Effect Sensor (Optional), Limit Switch Feedback (Optional)
Duty Cycle	20% (4min on, 16min off)
Weather Protection	IP67
Overload Protection	Electrical shutoff at 25A
Operational Temperature	-40°C to +65°C (-40°F to +149°F)
Operating Noise	<65dB
Limit Switch	Built-In Magnetic Sensor (Non-Adjustable)
Cable Length	40" (Customizable)
Connector	Molex Mega-Fit 2-Pin Receptacle (All Units) Molex Mini-Fit Jr 4-Pin Receptacle (Hall Effect Units)
Front Mounting Hole Size	0.52"
Rear Mounting Hole Size	0.52"
Actuator Type	Industrial
Motor Type	Brushed DC Motor
Screw Type	Ball, ACME
Stroke Rod Material	Stainless Steel
Housing Material	Aluminum
Gear Material	Powder Metallurgy Steel Alloy
Compatible Mounting Brackets	BRK-17

DIMENSIONS

Note: All dimensions are listed in inches.

DIAGRAM



ALL DIMENSIONS IN INCHES

HOLE TO HOLE LENGTH

Note: 3035 lbs and 3822 lbs options are only available up to and including 24" Stroke.

Stroke Length	2"	4"	6"	8"	9"	10"	12"	14"	16"	18"	24"
A (Fully Retracted)	11.06	13.06	15.06	17.06	18.06	19.06	23.02	25.02	27.02	29.02	36.99
B (Fully Extended)	13.06	17.06	21.06	25.06	27.06	29.06	35.02	39.02	43.02	47.02	60.99

2" ≤ Stroke Length < 12"

A (Fully Retracted) = Stroke Length + 9.06"
 B (Fully Extended) = Stroke Length x 2 + 9.06"

12" ≤ Stroke Length < 24"

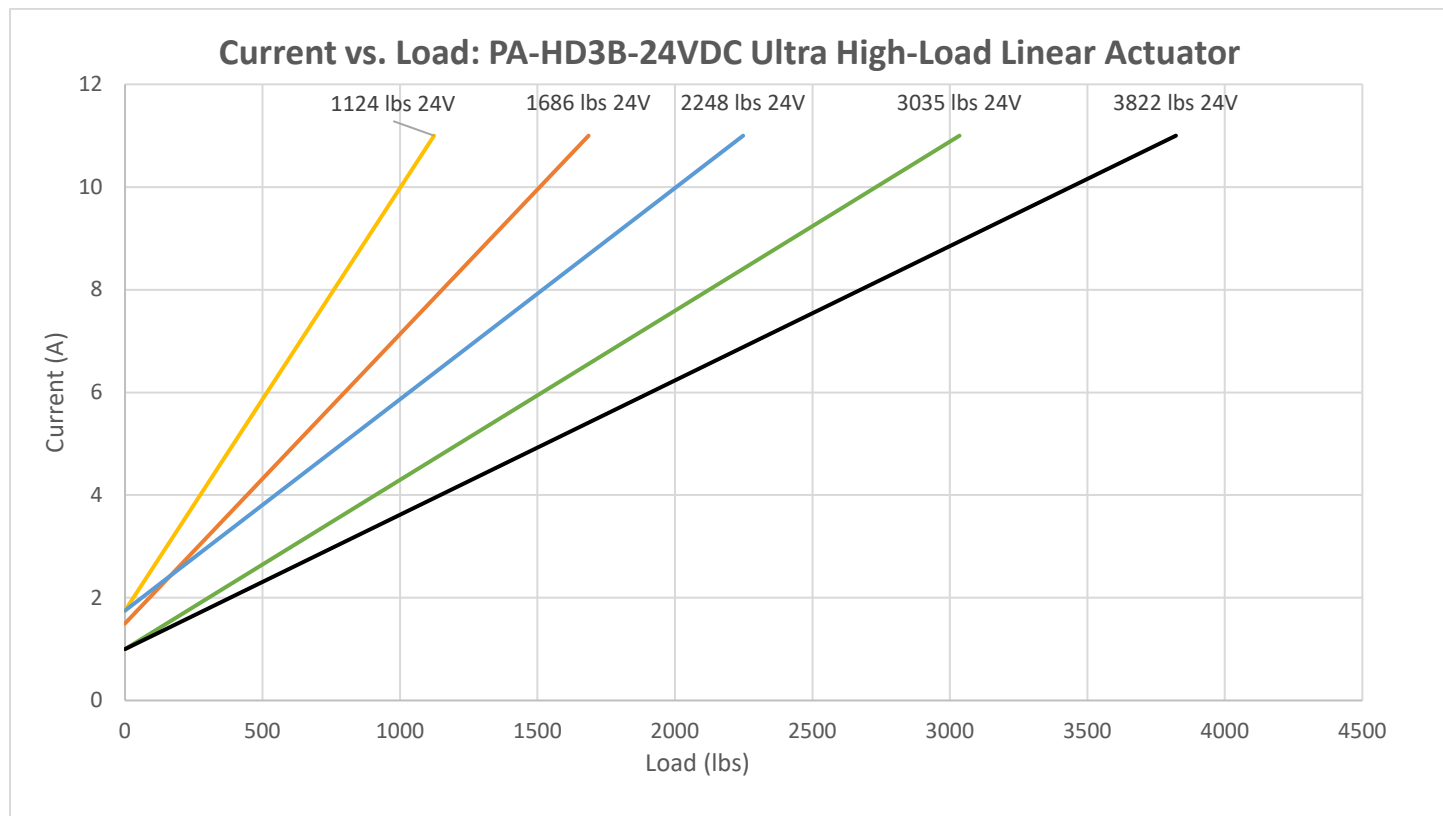
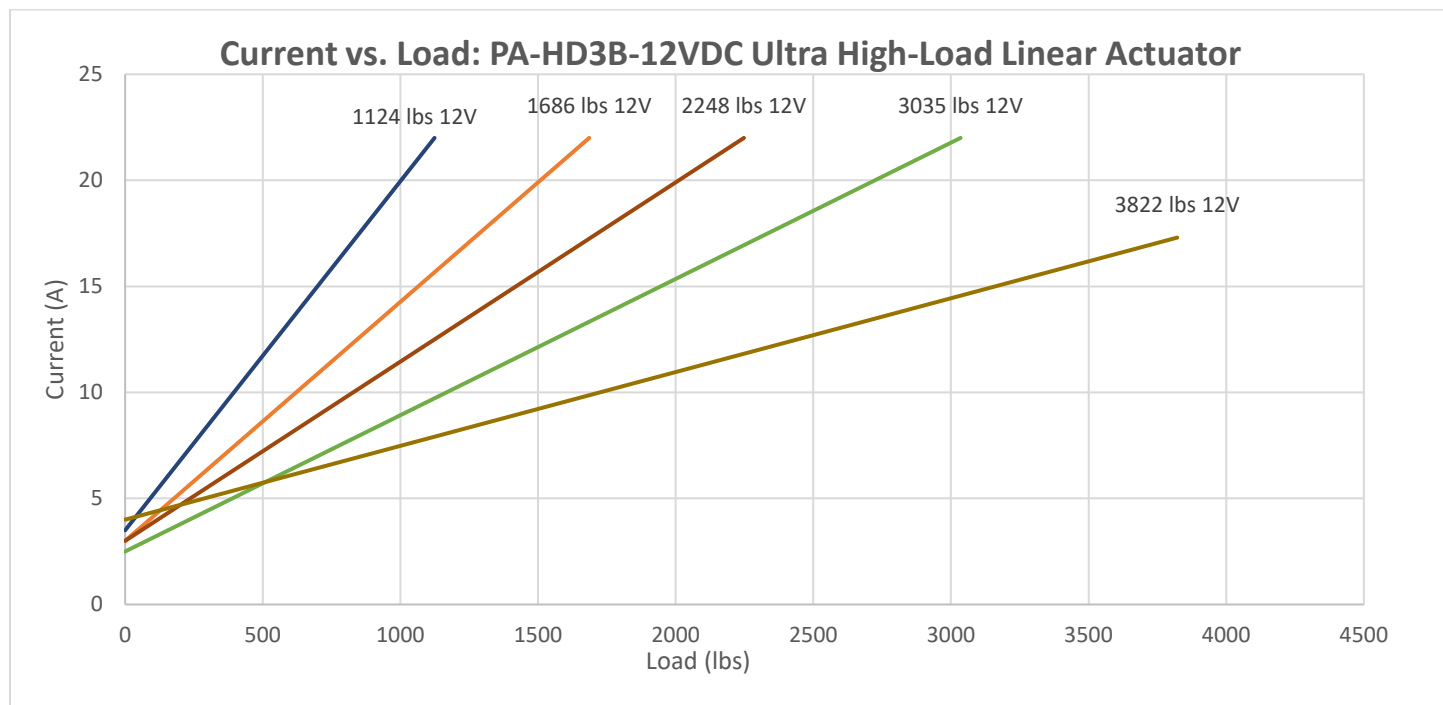
A (Fully Retracted) = Stroke Length + 11.02"
 B (Fully Extended) = Stroke Length x 2 + 11.02"

24" ≤ Stroke Length ≤ 40"

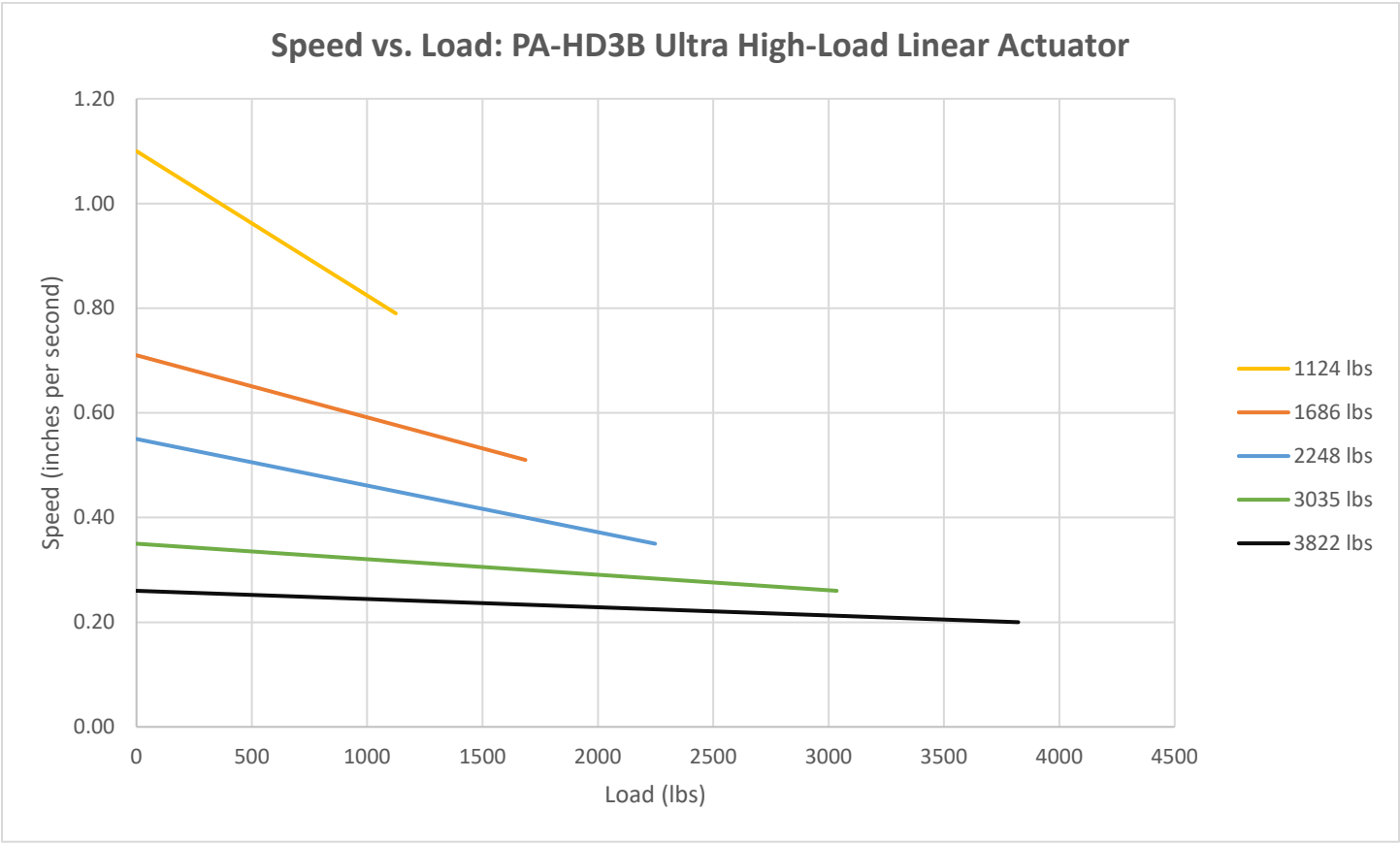
A (Fully Retracted) = Stroke Length + 12.99"
 B (Fully Extended) = Stroke Length x 2 + 12.99"

PERFORMANCE GRAPHS

SPEED VS LOAD



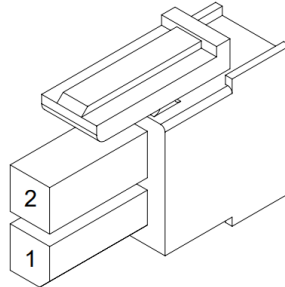
CURRENT VS LOAD



CONNECTORS

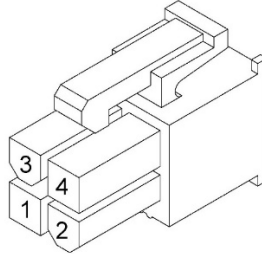
Note: Actuators without feedback come with the Motor 2-Pin Connector only.

MOTOR - 2-PIN CONNECTOR



Pin Location	Function	Wire Color	Wire Gauge
2	Motor + (Extend)	Red	12 AWG
1	Motor - (Retract)	Black	12 AWG

HALL EFFECT - 4 PIN CONNECTOR



Pin Location	Function	Wire Color	Wire Gauge
1	Hall Effect A – signal leads when extending	Brown	22 AWG
2	Hall Effect B – signal leads when retracting	Green	22 AWG
3	Hall Effect COM	Black	22 AWG
4	Hall Effect 5V	Red	22 AWG

PARTS LIST

	Part Name	Part Number	Mating Part Number
Motor Housing	Molex Mega-Fit Receptacle 2 Circuits	1716920102	1054110102
Motor Terminals	Molex Mega-Fit Female Terminal 16-14 AWG	76823-0322	1054170333
Hall Effect Housing	Molex Mini-Fit Receptacle 4 Circuits	39-01-3045	39-01-3043
Hall Effect Terminals	Molex Mini-Fit Junior Female Terminal 24-18 AWG	39-00-0038	39-00-0040