Mach Motion Products

MLA-09 series

Arctic Duty Linear Actuator

Datasheet

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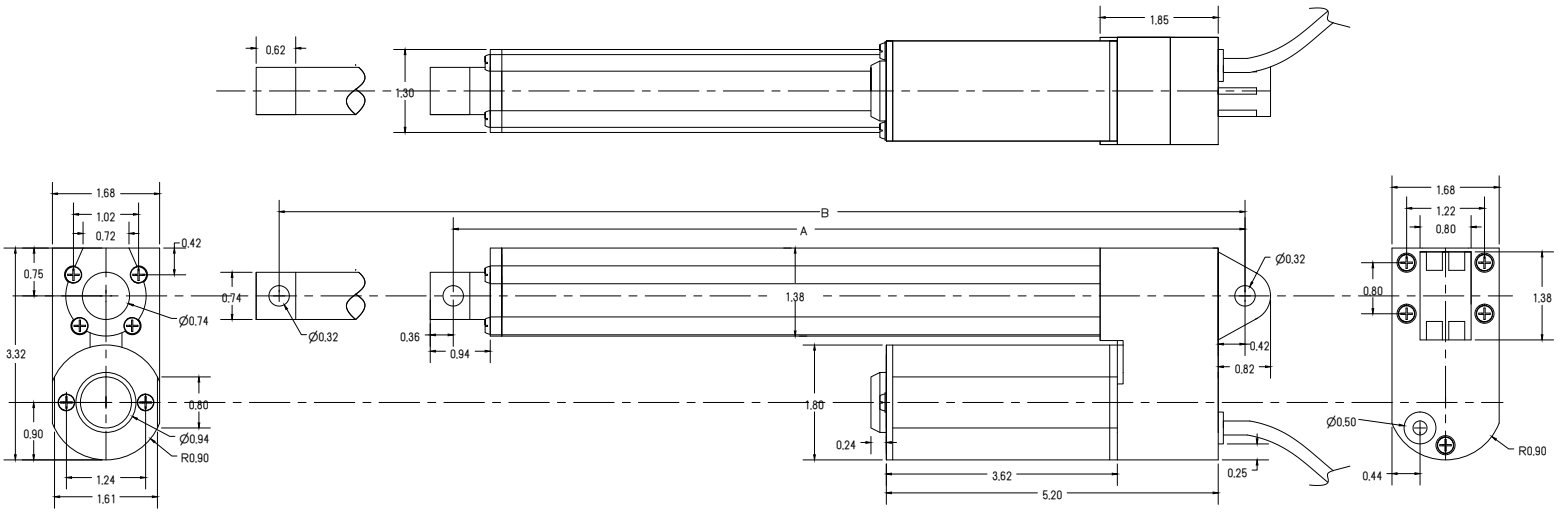
SPECIFICATIONS

Load (LBS)		No Load Current (A)				Full Load Current (A)				Speed (inch/sec)	
Dynamic	Static	12V	24V	36V	48V	12V	24V	36V	48V	No Load	Full Load
225	225	1.5	0.6	0.5	0.3	4.0	3.0	2.0	1.5	0.59	0.43
330	330	1.5	0.6	0.4	0.3	4.0	3.0	2.0	1.5	0.39	0.27
450	450	3.0	0.5	0.4	0.3	4.0	3.5	2.5	1.5	0.24	0.20

Input Voltage	12-48VDC
Stroke	1.0" to 40"
Duty Cycle	25% (5 minutes on, 15 minutes off)
Protection Class	IP66
Operational Temperature Protection	-40°C to 65°C (-40°F to 149°F)
Limit Switch	Built In (Non-Adjustable)
Cable Length	40" (customizable)
Front Mounting Hole Inner Diameter	0.32"
Rear Mounting Hole Inner Diameter	0.32"
Motor Type	Brushed DC
Screw Type	ACME Screw
Stroke Rod Material	Stainless Steel
Housing Color	Silver
Housing Material	Aluminum Alloy 6062
Gear Material	Polyformaldehyde
Certifications	CE/RoHS (UL customizable)

DIMENSIONS



Hole to Hole

	Stroke	1	2	3	4	6	8	9	10	12	14	16	18	20	22	24	30	40
MLA-09	A	5.50	6.50	7.50	8.50	10.50	12.50	13.50	14.50	17.75	19.75	21.75	23.75	25.75	27.75	30.50	36.50	48
	B	6.50	8.50	10.50	12.50	16.50	20.50	22.50	24.50	29.75	33.75	37.75	41.75	45.75	49.75	54.50	66.50	88

For Stroke Length less than 12"

A = Stroke Length + 4.53"

B = Stroke Length x 2 + 4.53"

For Stroke Length 12" to less than 24"

A = Stroke Length + 5.71"

B = Stroke Length x 2 + 5.71"

For Stroke Length 24" to 30"

A = Stroke Length + 6.50"

B = Stroke Length x 2 + 6.50"

For Stroke Length greater than 30"

A = Stroke Length + 7.87 "

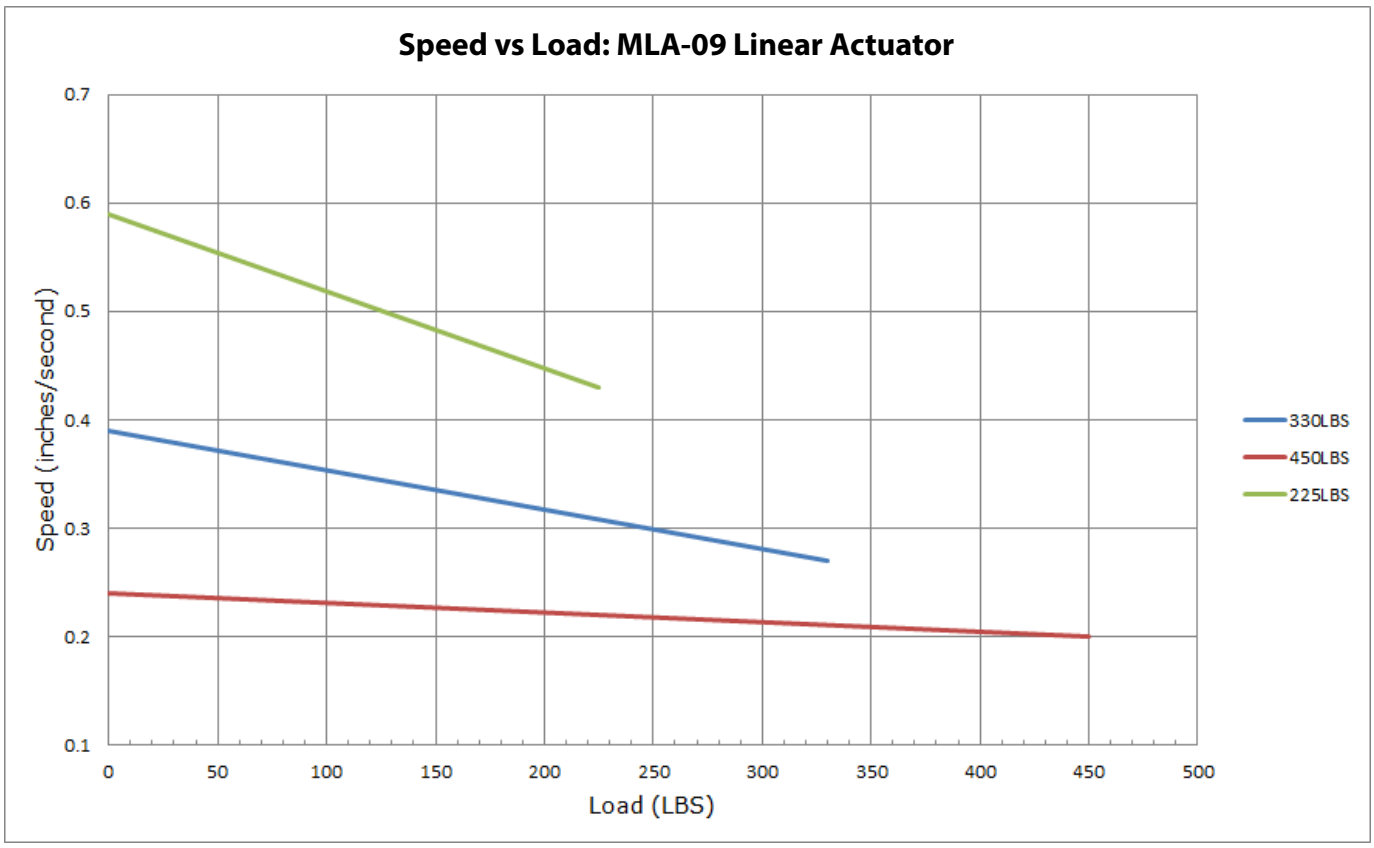
B = Stroke Length x 2 + 7.87 "

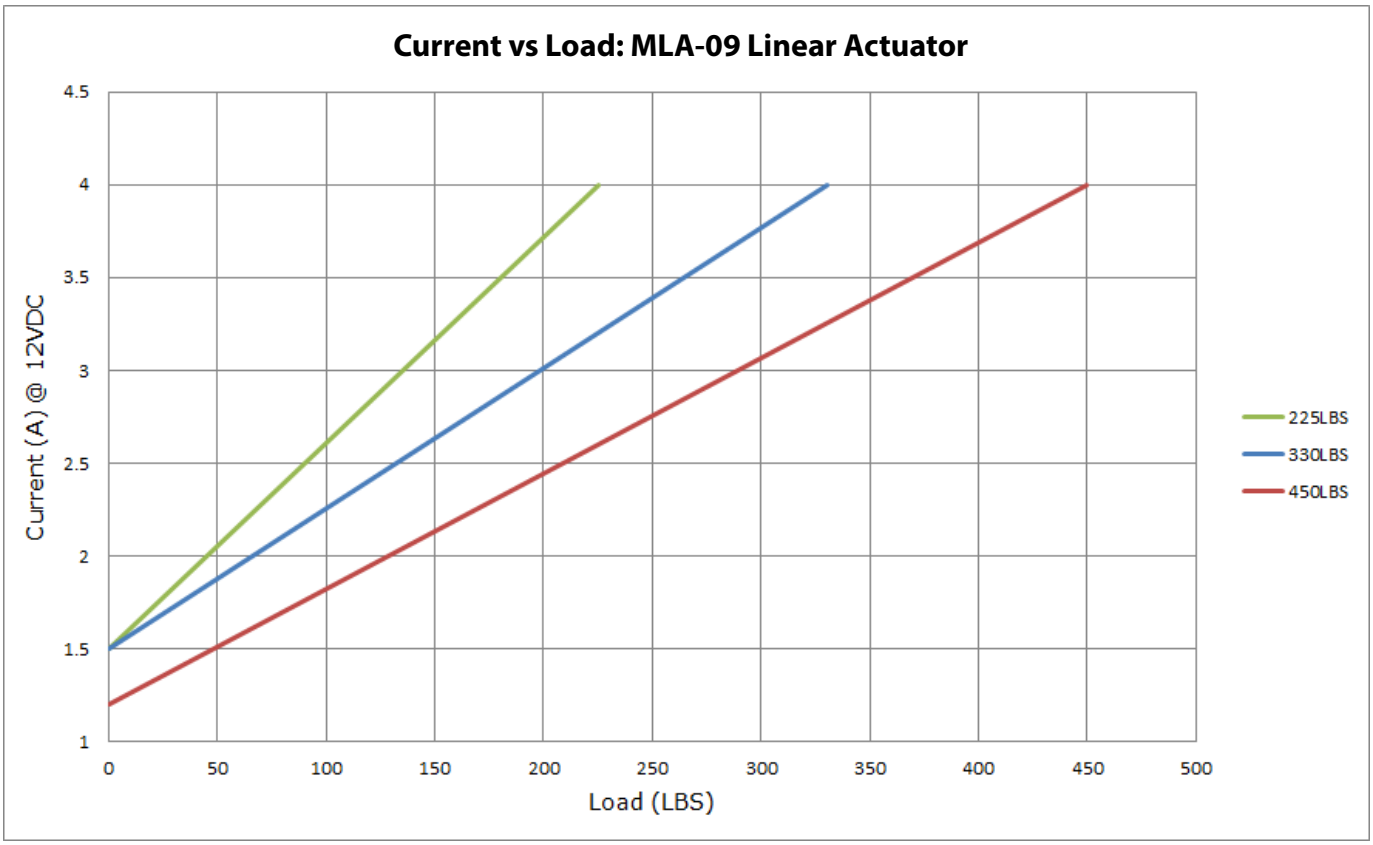
For Potentiometer Units - Stroke Length up to 8"

A = Stroke Length + 5.50"

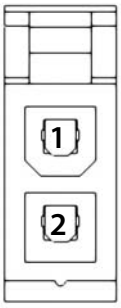
B = Stroke Length x 2 + 5.50"

SPEED/CURRENT vs LOAD





CONNECTORS & FEEDBACK



2-Pin Connector (Standard)

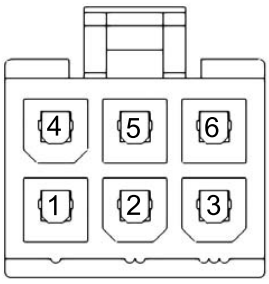
Motor		
1	2	
M-	M	

Component	Part Name	Part Number	Mating Part Number
Housing	Molex Mini-Fit Jr 2-Pin Receptacle	39-01-2025	39-01-2029 /39-01-2026

6-Pin Hall Effect Connector

*For Stroke Length up to 40"

Front View



Motor		Hall Sensor			
4	5	2	3	1	6
M+ (Extend)	M- (Retract)	GND	+5VDC	Signal 2 Leads when Extending	Signal 1 Leads when Retracting

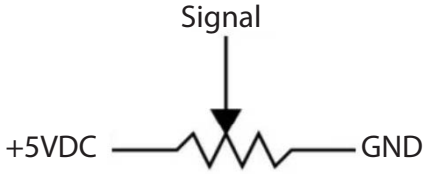
Component	Part Name	Part Number	Mating Part Number
Housing	Molex Mini Fit Jr 6-Pin Receptacle	39-01-2065	39-01-2069/ 39-01-2066

Output Signal Extending	Output Signal Retracting
Hall Effect 1 Signal Hall Effect 2 Signal	Hall Effect 1 Signal Hall Effect 2 Signal

Force	Resolution (pulses/inch)
250	160
330	650
450	433

Potentiometer Specifications

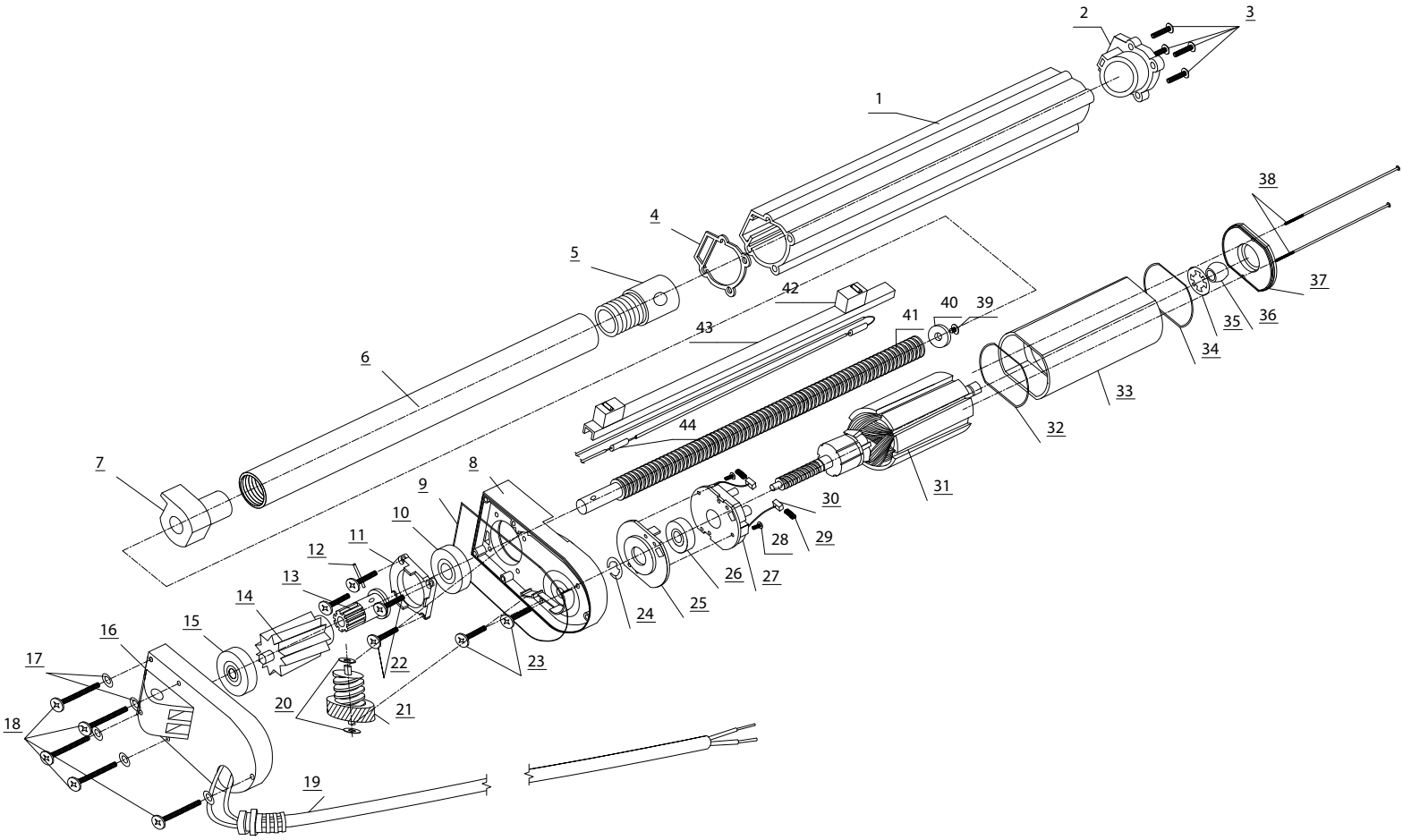
*For Stroke Length up to 8"



Resistance*	Number of Turns	Tolerance
0-10kΩ	10	+/- 5%

*Actual resistance value may vary within the 0-10kΩ range based on stroke length

INTERNAL COMPONENTS



INTERNAL DESCRIPTIONS

Item	Description	Qty
1	Shaft Encloser	1
2	Shaft Enclosure Top Cap	1
3	Top Cap Screw	4
4	Shaft Encloser Bottom Gasket	1
5	Shaft Top with Mounting Hole	1
6	Shaft	1
7	Shaft Base with Limit Switches Arm	1
8	Actuator Base	1
9	Actuator Base Gasket	1
10	Shaft Bearing	1
11	Shaft Bearing Holder	1
12	Shaft Gear Cap Pin	1
13	Shaft Gear Cap	1
14	Shaft Gear	1
15	Bottom Shaft Bearing	1
16	Base Cover with Mounting Hole	1
17	Base Cover Screw Gasket	5
18	Base Cover Screw	5
19	Power Cable	1
20	Gear Washer	2
21	Gear	1
22	Shaft Bearing Holder Screw	4
23	Motor Base Screw	2
24	Electric Motor Snap Ring	1
25	Electric Motor Base	1
26	Electric Motor Bearing	1
27	Brush Holder PCB	1
28	Brush Holder Screw	2
29	Electric Motor Brush Spring	2
30	Electric Motor Brush	2
31	Electric Motor Rotor	1
32	Motor Enclosure Bottom Gasket	1
33	Electric Motor Encloser with Stator	1
34	Motor Enclosure Top Gasket	1
35	Electric Motor Top Bearing Holder	1
36	Electric Motor Top Bearing	1
37	Electric Motor Top Cap	1
38	Motor Enclosure Screw	2
39	Shaft Drive End Support Screw	1
40	Shaft Drive End Support	1
41	Treaded Shaft Drive / Lead Screw	1
42	Limit Switch	2
43	Limit Switches Base	1
44	Diode	2