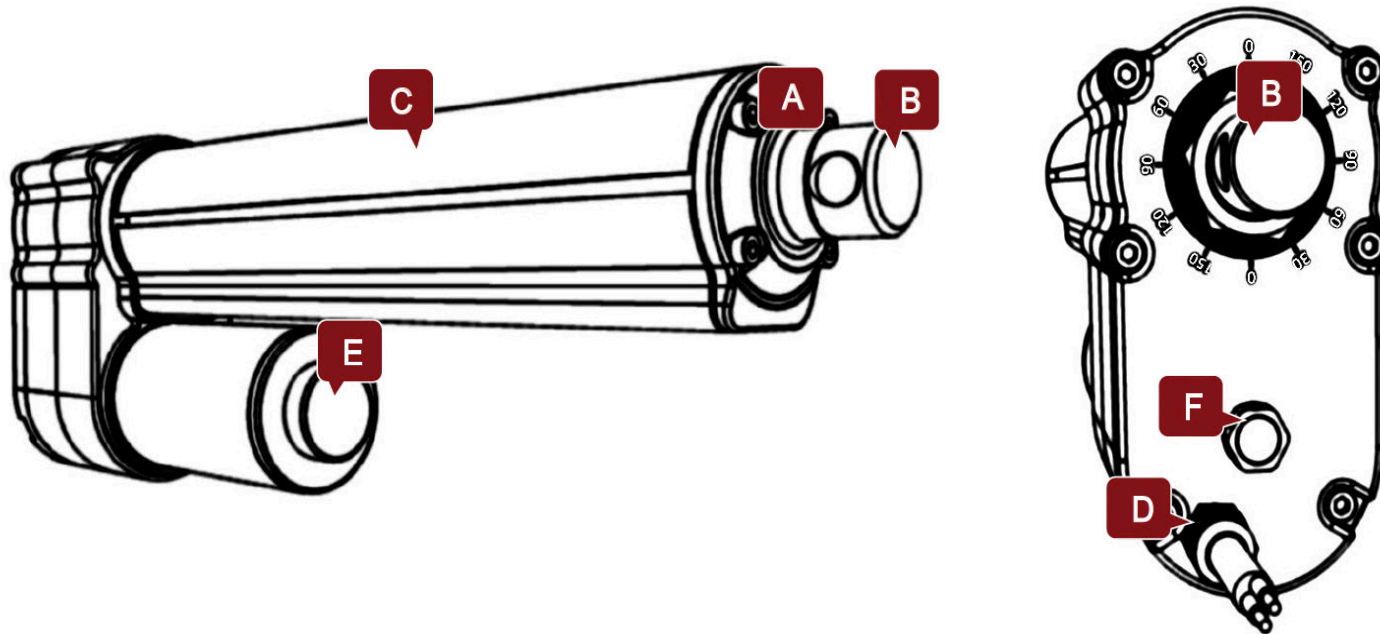


MLA-36 Industrial Linear Actuator

2026 Catalog




• Glossary of Terms



- A:** Stainless Steel Piston Rod
- B:** Connector
- C:** Aluminum Alloy Housing
- D:** Waterproof Cable
- E:** Manual Override
- F:** Breathing Valve

Stroke	How far the rod extends outwards from the body. The difference between fully extended length and fully retracted length. (Customizable)
Installation Length	The length of unit when fully closed. (Customizable)
Front Mounting End	Optional, 0° or 90°.
Rear Mounting End	Optional, 0° or 90°.
Dynamic Force	The max. force the actuator can carry while it is moving.
Self-locking	The max. force the actuator can hold when it is stopped.
Weather Protection	IPXX. The first digit: Dust Protection. The Second Digit: Liquids Protection. Please refer to [Table 1.]
Duty Cycle	Continuous working time "a", rest time "b". Duty Cycle is a/(a+b)x100%. Please refer to [Table 1.]
Speed	Includes free-load speed and full load speed.
Hall Sensor	Provides pulse signals. Displacement measurement is achieved through pulse counting, and the phase difference of the waveform can be used to identify the rotation of motor. Check [Table 1] for availability.
Potentiometer	Potentiometer is a three-terminal variable resistor with a rotating contact which is used to measure the displacement of actuators. Check [Table 1] for availability.
Manual Override	Can be used to extend or retract the actuator when there is no power in an emergency situation. Check [Table 1] for availability.

• General Specifications

Color	<input checked="" type="checkbox"/> Black	<input type="checkbox"/> Silver	<input type="checkbox"/> Custom						
Lead Screw	<input checked="" type="checkbox"/> Acme Screw	<input checked="" type="checkbox"/> Ball Screw							
Operation Mode	<input type="checkbox"/> Electrical	<input checked="" type="checkbox"/> Electrical + Manual							
Application	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Furniture	<input type="checkbox"/> Medical						
Operational Temp.	<input type="checkbox"/> -5°C to 40°C	<input checked="" type="checkbox"/> -10°C to 65°C	<input checked="" type="checkbox"/> -40°C to 65°C						
Operating Noise	<input type="checkbox"/> ≤45dB	<input type="checkbox"/> ≤50dB	<input checked="" type="checkbox"/> ≤65dB						
Stroke Range	<input checked="" type="checkbox"/> 50 to 600mm	<input checked="" type="checkbox"/> 600 to 1,000mm							
Dynamic Load	<input type="checkbox"/> ≤1,200N	<input type="checkbox"/> ≤2,000N	<input type="checkbox"/> ≤4,000N				<input type="checkbox"/> ≤7,000N	<input checked="" type="checkbox"/> ≤12,000N	<input type="checkbox"/> ≤20,000N
Duty Cycle	<input type="checkbox"/> 10%	<input type="checkbox"/> 20%	<input checked="" type="checkbox"/> 20-30%*				<input type="checkbox"/> ≤50%	<input type="checkbox"/> 100%	
Motor Type	<input checked="" type="checkbox"/> Brushed DC	<input type="checkbox"/> Stepper Motor	<input type="checkbox"/> Brushless				<input type="checkbox"/> Servo Motor		
Overload Protection	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Clutch	<input checked="" type="checkbox"/> Electronic	<input type="checkbox"/> Thermistor					
Weather Protection	<input type="checkbox"/> IP20	<input type="checkbox"/> IP43	<input type="checkbox"/> IP54	<input type="checkbox"/> IP65	<input type="checkbox"/> IP66	<input checked="" type="checkbox"/> IP67			
Position Feedback	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Endstop Signal	<input checked="" type="checkbox"/> Hall Sensor	<input checked="" type="checkbox"/> Potentiometer	<input type="checkbox"/> Encoder				
	<input checked="" type="checkbox"/> Magnetic Switches	<input checked="" type="checkbox"/> Analog Signal							
Input Voltage	<input checked="" type="checkbox"/> 12VDC	<input checked="" type="checkbox"/> 24VDC	<input checked="" type="checkbox"/> 36VDC	<input checked="" type="checkbox"/> 48VDC	<input type="checkbox"/> 110VAC	<input type="checkbox"/> 220VAC			

*Note: Varies with different gearset options.

[Table 1]

Options for MLA-36 Available Other Models

• Technical Parameters

Code	Lead Screw	Duty Cycle	Max. Dynamic Load	Max. Self-Locking Load	Pitch	Speed +/-10% (mm/sec)		Max. Stroke without Pot.	Max. Stroke with Pot.
			(*See Note 2)	(N)		(mm)	(mm)		
			(N)	(N)	(mm)	Free Load	Full Load	(mm)	(mm)
A	Ball Screw	20%	12,000	15,000	5	8.5	7	500	300
B			7,500	10,000	5	17	14	700	300
C		30%	4,500	6,000	5	28	25	1,000	300
D			3,500	5,000	10	33.5	28.5	1,000	600
E			2,000	3,500	10	55.5	49	1,000	600
F	ACME Screw	20%	9,000	12,000	4	6.7	6	500	240
G			6,000	9,000	8	13.3	11	700	240
H		25%	3,000	5,000	8	26.7	24	1,000	480
I			2,000	4,000	8	44.5	38	1,000	480
J			4,000	6,000	12	20	18	1,000	720
K			1,200	2,000	12	66.7	56	1,000	720

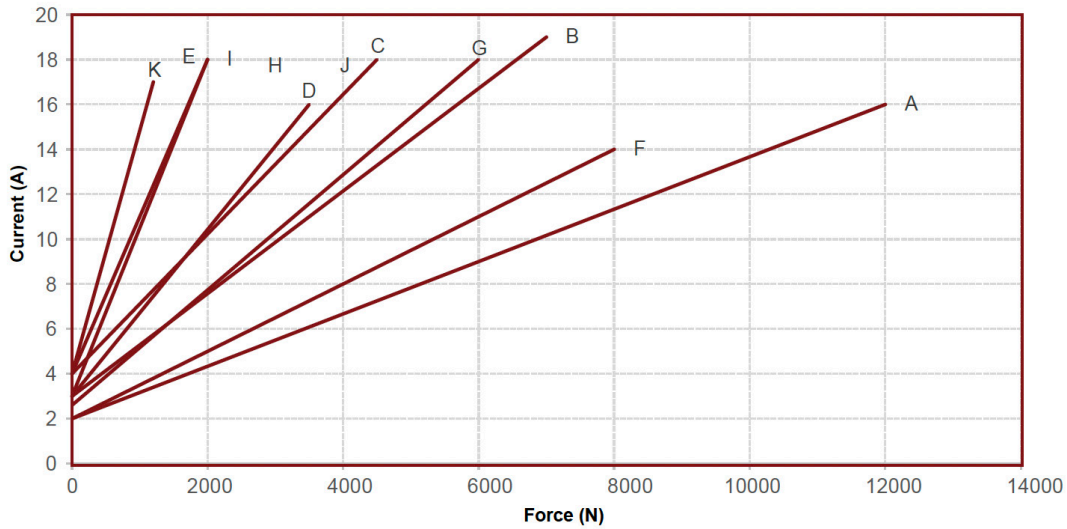
[Table 2]

*Notes:

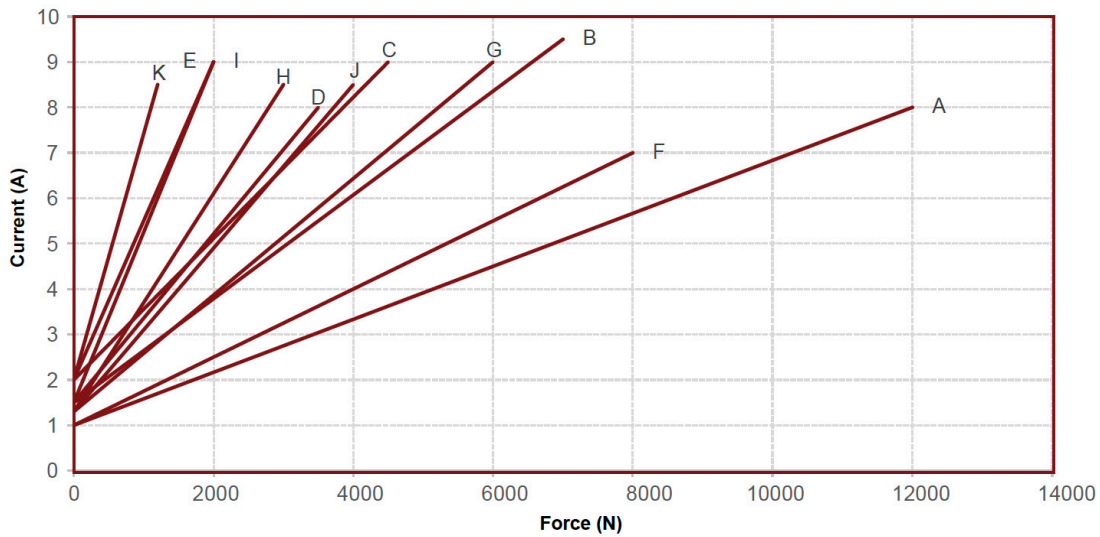
1. Measurements are made with actuators in connection with stable power supplies and ambient temperature of 20°C.
2. For example, when real load is 6,000N, choosing code "B" or "G" is recommended. You can also choose "A" or "F," each of which come with an increased load buffer, higher safety factors, and extended product service time.
3. Many factors affect the "Customizable Maximum Stroke," such as load, speed, and direction of force. Actual application scenarios should be considered. Please contact cs@machmo.com if your required parameters are not listed.

• Performance

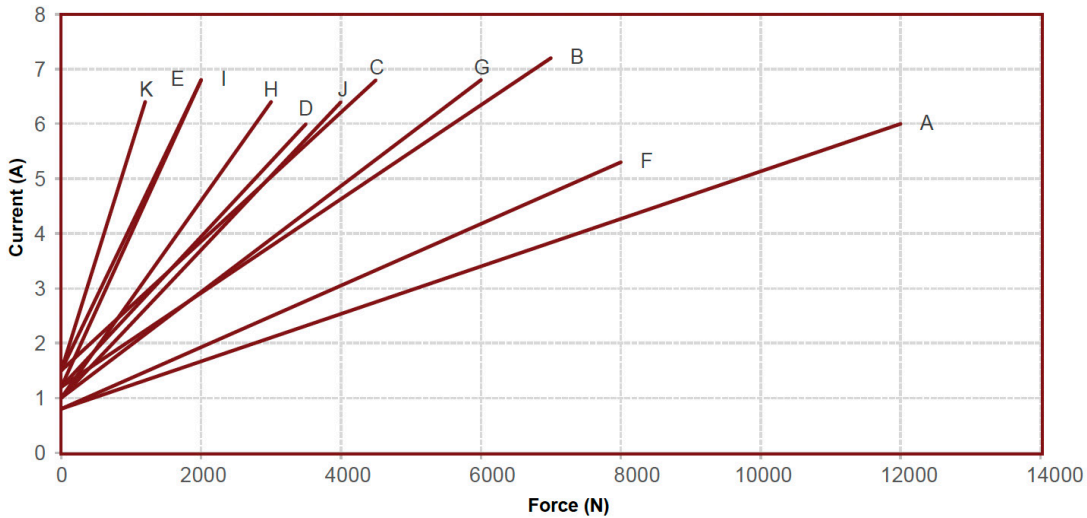
Code 1 : 12 VDC



Code 2 : 24 VDC



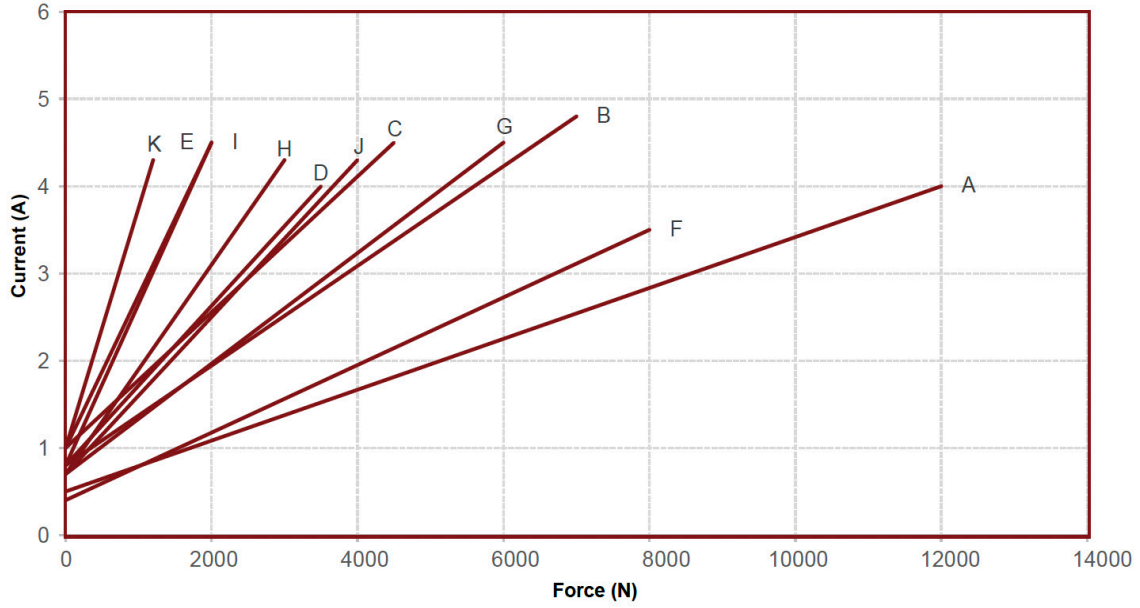
Code 3 : 36 VDC



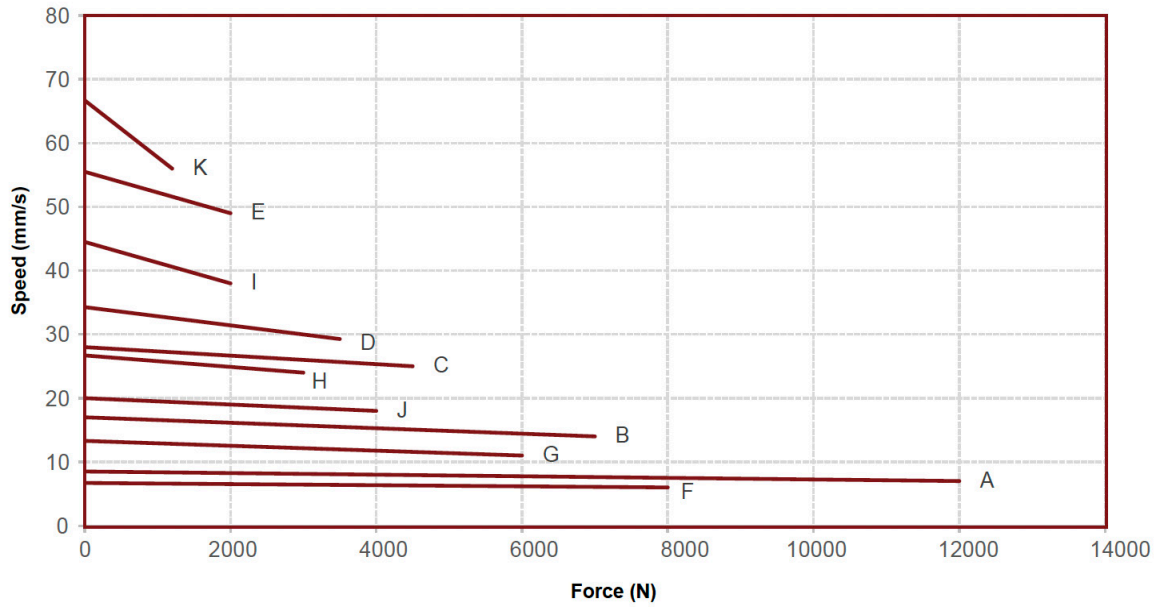
* Note: Measurements are made with Actuators in Connection with Stable Power Supplies and Ambient Temperature of 20°C.

• Performance (continued)

Code 4 : 48 VDC



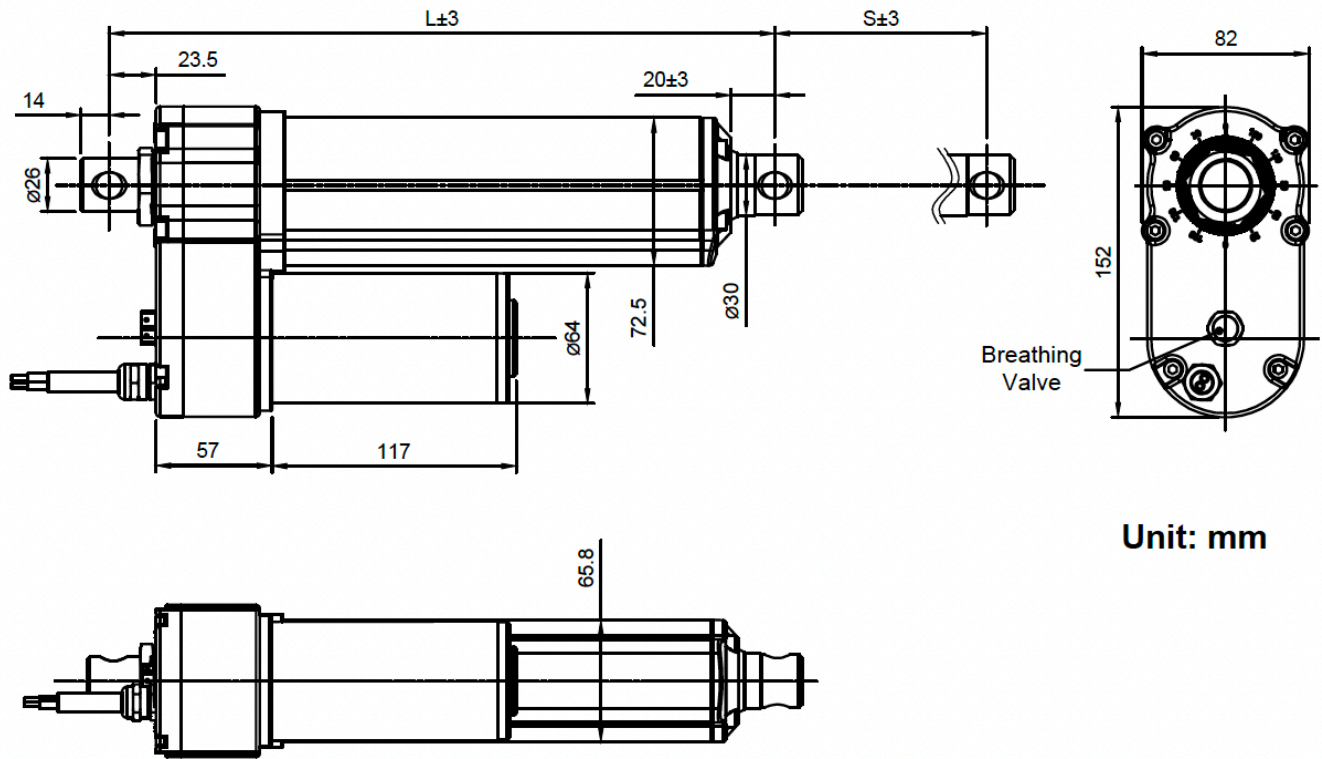
Speed vs. Force



* Note: Measurements are made with Actuators in Connection with Stable Power Supplies and Ambient Temperature of 20°C.

• Product Dimensions - No Potentiometer

1. Overall Dimensions - No Potentiometer



2. Installation Size of Ball Screw ($L \geq A + B$)

Front End Mount	Rear End Mount R01 - R05	Rear End Mount R06	Rear End Mount R07
F01 - F03	S + 202mm	S + 187mm	S + 216mm
F04, F05	S + 209mm	S + 194mm	S + 223mm
F06	S + 206mm	S + 191mm	S + 220mm
F07	S + 215mm	S + 200mm	S + 229mm
F08	S + 240mm	S + 225mm	S + 254mm
F09	S + 250mm	S + 235mm	S + 264mm
Stroke Minimum = 52mm			

[Table 3]

3. Installation Size of Acme Screw ($L \geq A + B$)

Front End Mount	Rear End Mount R01 - R05	Rear End Mount R06	Rear End Mount R07
F01 - F03	S + 195mm	S + 180mm	S + 209mm
F04, F05	S + 202mm	S + 187mm	S + 216mm
F06	S + 199mm	S + 184mm	S + 213mm
F07	S + 208mm	S + 193mm	S + 222mm
F08	S + 233mm	S + 218mm	S + 247mm
F09	S + 243mm	S + 228mm	S + 257mm
Stroke Minimum = 52mm			

[Table 4]

• Product Dimensions - No Potentiometer

4. Stroke VS. Installation Length

Stroke (S) (mm)	Installation Length (mm)
52 - 300mm	+ 0
301 - 600mm	+50
≥600mm	+100
Stroke Minimum = 52mm	

[Table 5]

How to Calculate "Installation Length":

S = Stroke, L = Installation Length
 $L \geq A + B$

Examples:

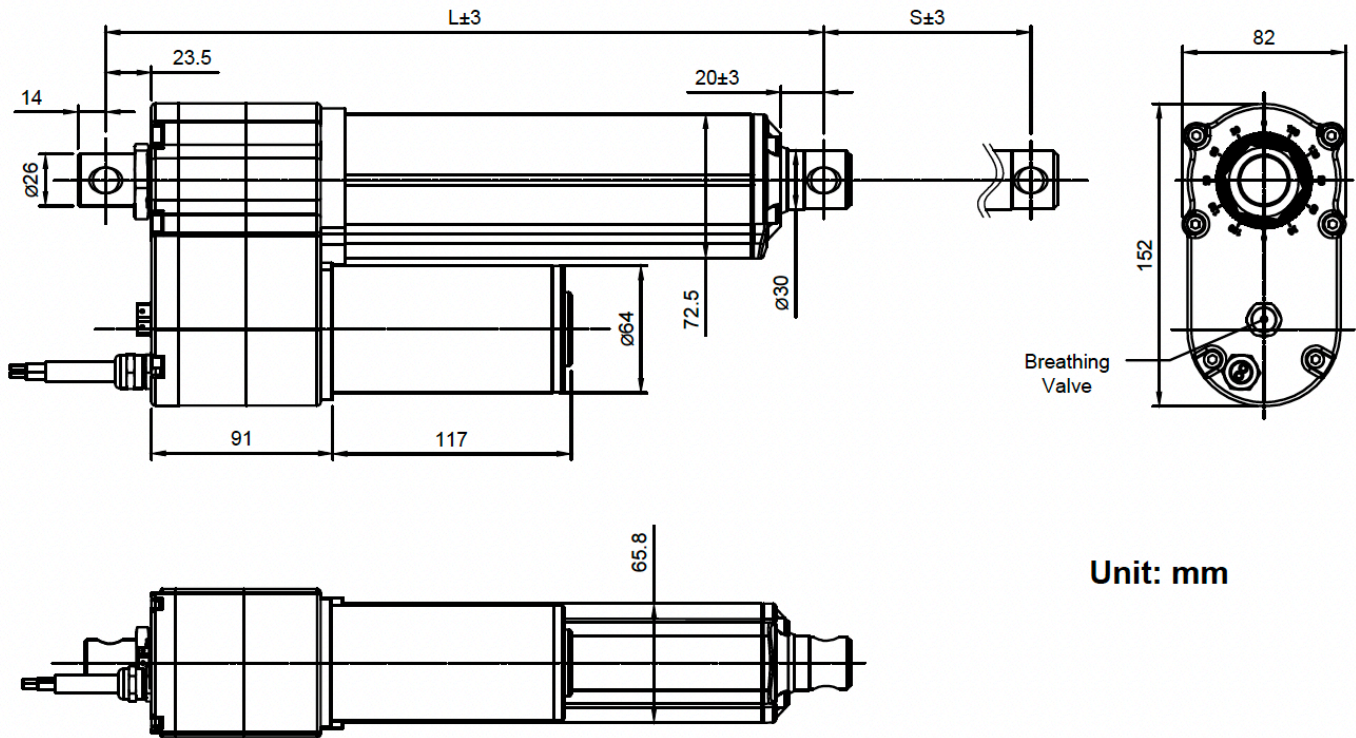
Front Mount	Rear Mount	S (mm)	A (mm)	B (mm)	$L \geq A + B$ (mm)
F04	R07	300	300 + 223	+ 0	≥523

Front Mount	Rear Mount	S (mm)	A (mm)	B (mm)	$L \geq A + B$ (mm)
F01	R06	350	350 + 180	+ 50	≥580

[Table 6]

• Product Dimensions - Potentiometer Available

1. Overall Dimensions - Potentiometer Available



Unit: mm

2. Installation Size of Ball Screw ($L \geq A + B$)

Front End Mount	Rear End Mount R01 - R05	Rear End Mount R06	Rear End Mount R07
F01 - F03	S + 236mm	S + 221mm	S + 250mm
F04, F05	S + 243mm	S + 228mm	S + 257mm
F06	S + 240mm	S + 225mm	S + 254mm
F07	S + 249mm	S + 234mm	S + 263mm
F08	S + 274mm	S + 259mm	S + 288mm
F09	S + 284mm	S + 269mm	S + 298mm
Stroke Minimum = 52mm			

[Table 7]

3. Installation Size of Acme Screw ($L \geq A + B$)

Front End Mount	Rear End Mount R01 - R05	Rear End Mount R06	Rear End Mount R07
F01 - F03	S + 229mm	S + 214mm	S + 243mm
F04, F05	S + 236mm	S + 221mm	S + 250mm
F06	S + 233mm	S + 218mm	S + 247mm
F07	S + 242mm	S + 227mm	S + 256mm
F08	S + 267mm	S + 252mm	S + 281mm
F09	S + 277mm	S + 262mm	S + 291mm
Stroke Minimum = 52mm			

[Table 8]

• Product Dimensions - Potentiometer Available

4. Stroke VS. Installation Length

Stroke (S) (mm)	Installation Length (mm)
52 - 300mm	+ 0
301 - 600mm	+50
≥600mm	+100
Stroke Minimum = 52mm	

[Table 9]

How to Calculate “Installation Length”:

S = Stroke, L = Installation Length

C = Pot. Length

$$L \geq A + B + C$$

Examples:

Front Mount	Rear Mount	S (mm)	A (mm)	B (mm)	C (mm)	$L \geq A + B + C$ (mm)
F04	R07	300	300 + 257	+ 0	+ 34	≥591

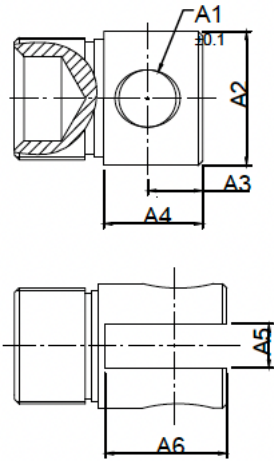
Front Mount	Rear Mount	S (mm)	A (mm)	B (mm)	C (mm)	$L \geq A + B + C$ (mm)
F04	R07	350	300 + 229	+ 50	+ 34	≥663

[Table 10]

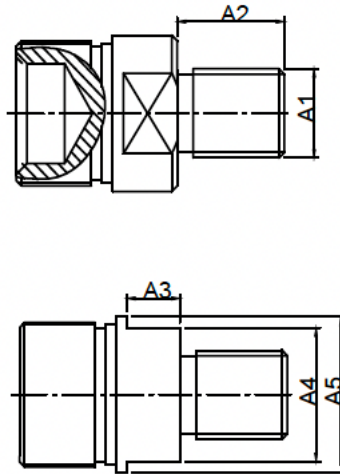
• Mounting Connectors

1. Front End Mounting

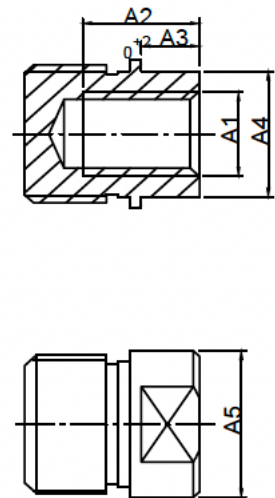
Type A: Thru Hole
Code: F01 - F05



Type B: Male Thread
Code: F06

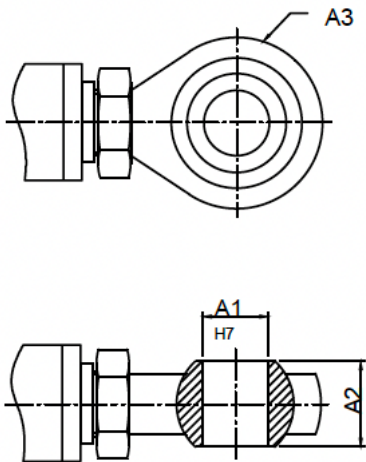


Type C: Female Thread
Code: F07



Unit: mm

Type D: Joint Bearing
Code: F08, F09

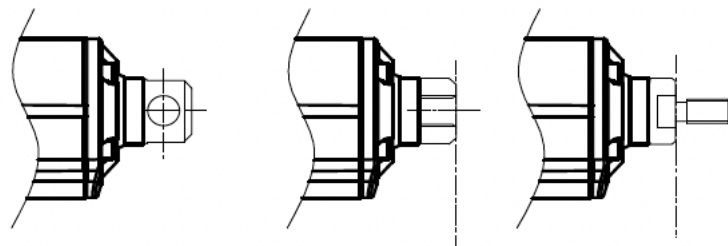


2. Mounting Connector Dimensions (mm)

Code	A1	A2	A3	A4	A5	A6
F01	Ø12.2	Ø29	11.5	20	Without Slot	
F02	Ø13.2	Ø29	11.5	20		
F03	Ø14.2	Ø29	11.5	20		
F04	Ø12.2	Ø29	11.5	29	10	27.5
F05	Ø13.2	Ø29	11.5	29	10	27.5
F06	M16*2	20	10	24	Ø29	-
F07	M16*2	20	10	24	Ø29	-
F08	Ø12	16	Ø32	-	-	-
F09	Ø16	21	Ø42	-	-	-

[Table 11]

Definition of Installation Length:

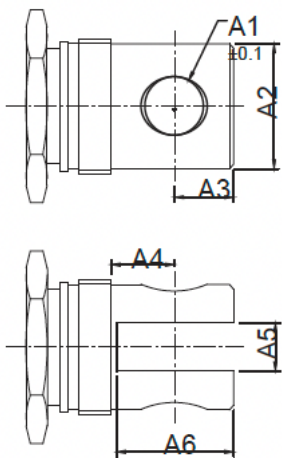


• Mounting Connectors

1. Rear End Mounting

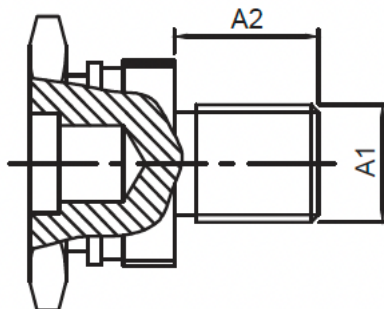
Type A: Thru Hole

Code: R01 - R05



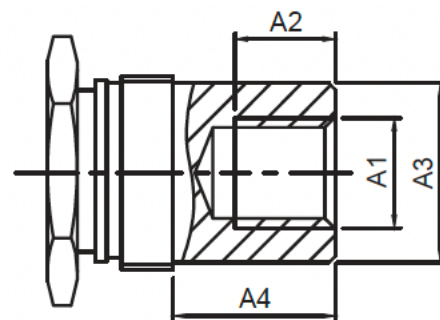
Type B: Male Thread

Code: R06



Type C: Female Thread

Code: R07



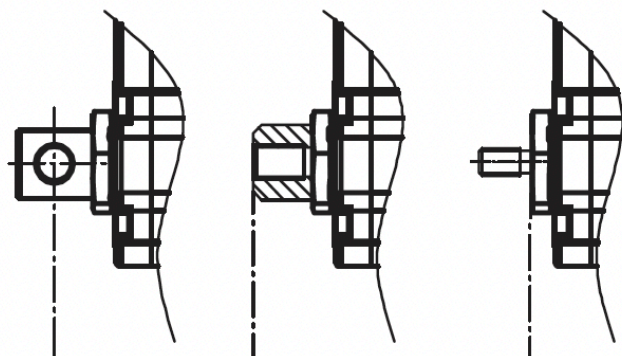
Unit: mm

2. Mounting Connector Dimensions (mm)

Code	A1	A2	A3	A4	A5	A6
R01	Ø12.2	Ø26	14	15	Without Slot	
R02	Ø13.2	Ø26	14	15		
R03	Ø14.2	Ø26	14	15		
R04	Ø12.2	Ø26	14	15	10	27
R05	Ø13.2	Ø26	14	15	10	27
R06	M16*2	20	-	-	-	-
R07	M16*2	20	Ø26	29	-	-

[Table 12]

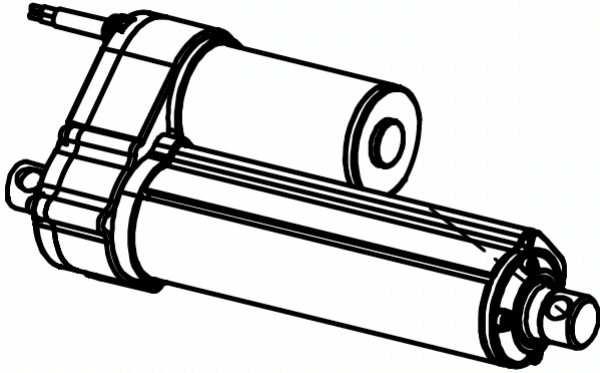
Definition of Installation Length:



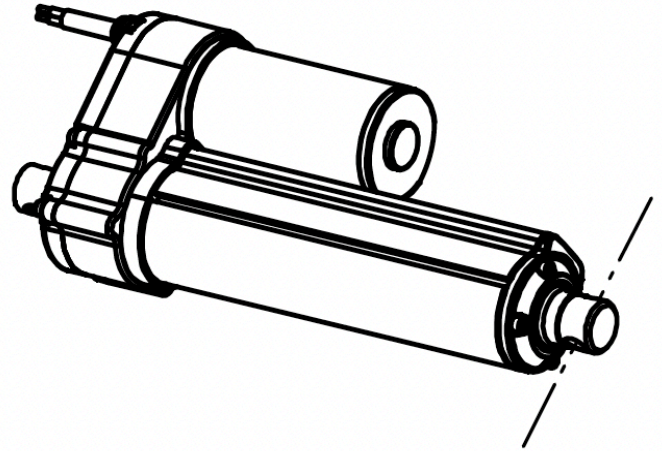
• **Mounting Orientation**

1. Front Hole Mounting

Code 1: 90°

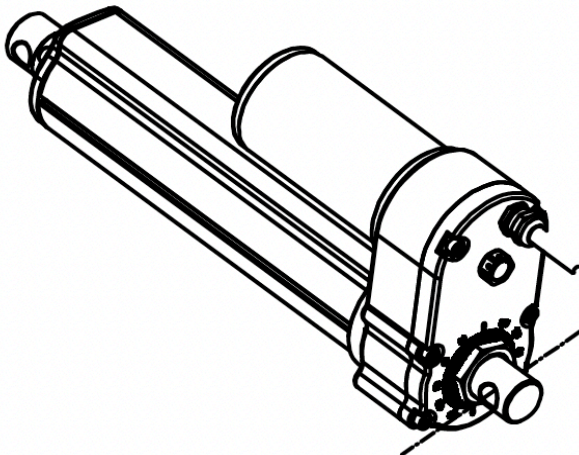


Code 2: 0°

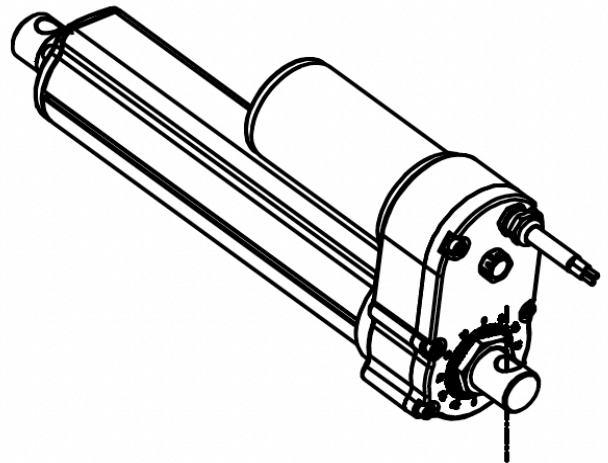


2. Rear Hole Mounting

Code 1: 90°



Code 2: 0°



• Signal Feedback

0. Standard Limit Switches Without Signal Feedback

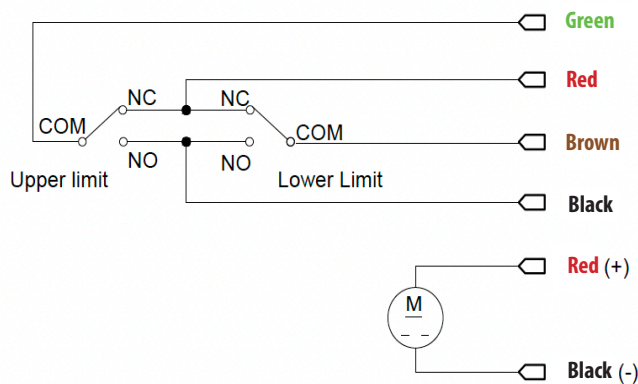
Standard MLA-36 comes with limit switches that automatically shut off motor at the end of travel path.

Wire Type		
	Black	Red
Extend	-	+
Retract	+	-

[Table 13]

1. Endstop Signals

Equipped with two separate switches. One cuts off power supply at either end of stroke, and the other is used to supply signals.



[Table 14]

Wire Type		
	Black	Red
Extend	-	+
Retract	+	-

Signal Wiring Diagram	
Black	Upper, Lower Limit NO
Red	Upper, Lower Limit NO
Green	Upper Limit COM
Brown	Lower Limit COM

[Table 15]

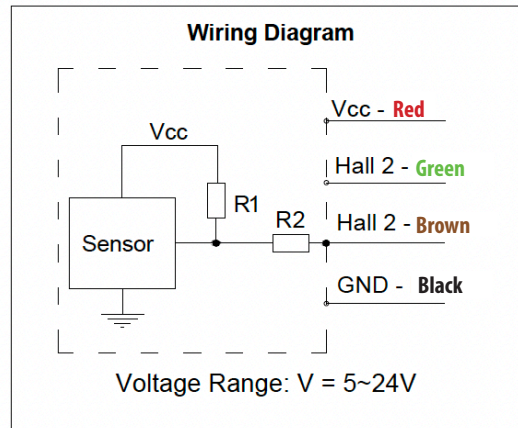
2. Hall Effect Sensor (4 Poles)

Dual Hall is Standard.

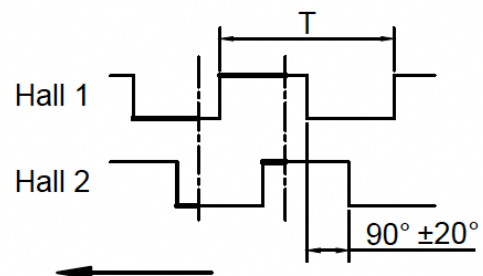
Code	Pulse Equivalent per Sensor* (pulse/mm)
A	32
B	16
C	9.6
D	8
E	4.8
F	40
G	20
H	10
I	6
J	13.3
K	4

*Note: The number of pulse signals corresponding to each 1mm stroke of a single Hall.

[Table 16]



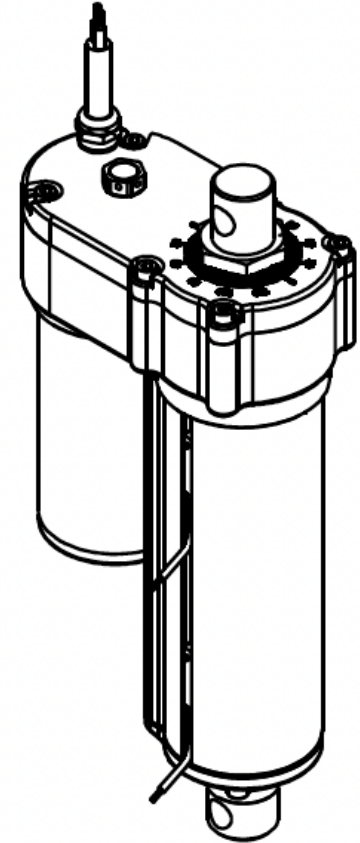
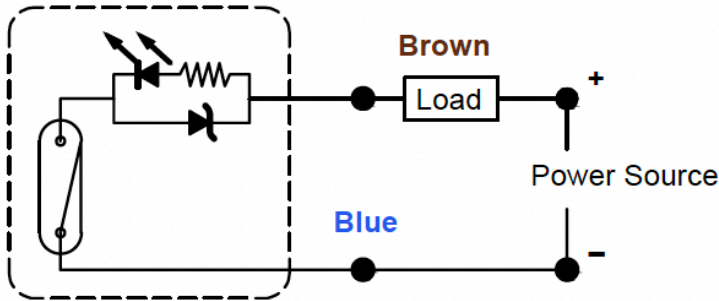
Oscilloscope



• Signal Feedback

4. Magnetic Switches

- Open Signal is default, can customize Closed Signal.
- Voltage Range: 5 ~ 24VDC
- Maximum Switch Current: <100mA



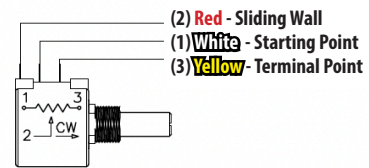
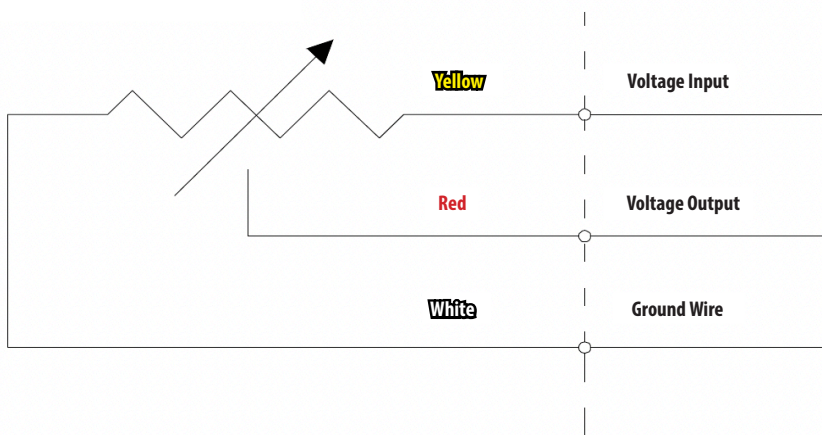
5. Potentiometer

Potentiometer Configuration Range

Code	Supports Max. Stroke Length	Resistance Value for Each 1mm Stroke
A, B, C	300mm	0.0294KΩ
D, E	600mm	0.0147KΩ
F, G	240mm	0.037KΩ
H, I	480mm	0.0184KΩ
J, K	720mm	0.0123KΩ

[Table 17]

Potentiometer Wiring Diagram



The resistance value between (1) White and (2) Red increases as the actuator extends.

• Product Inquiry Table

Selection	Specification	Available Options			
<input type="text"/>	Voltage	1 = 12V	2 = 24V	3 = 36V	4 = 48V
<input type="text"/>	Load and Speed	See [Table 2]			
<input type="text"/>	Stroke (mm)	Please contact cs@machmo.com if required stroke is out of range.			
<input type="text"/>	Installation Length (mm)	See [Tables 3-10]			
<input type="text"/>	Front Mounting End	F01 - F09		or FX = Custom	
<input type="text"/>	Rear Mounting End	R01 - R07		or RX = Custom	
<input type="text"/>	Mounting Hole Direction	Front 1 = 90°	Front 2 = 0°	Rear 1 = 90°	Rear 2 = 0°
<input type="text"/>	Signal Feedback	0 = None	1 = Endstop Signal	2 = Hall Sensor	3 = Magnetic Switches
<input type="text"/>		4 - Potentiometer			
<input type="text"/>	Overload Protection	1 = Clutch		2 = Adjustable Over Current Protection	
<input type="text"/>	Cable Length	1 = 600mm	2 = 1,000mm	3 = 1,500mm	4 = 2,000mm
<input type="text"/>		X = Custom			
<input type="text"/>	Connector	0 = Tinned Bare Wires		X = Custom	
<input type="text"/>	Working Temperature	1 = -10°C ~ 65°C		2 = -40°C ~ 65°C	
<input type="text"/>	Working Frequency	Estimated Work Cycles Per Day			
<input type="text"/>	End Use	Indoor or Outdoor?			

Application