



MLA-27

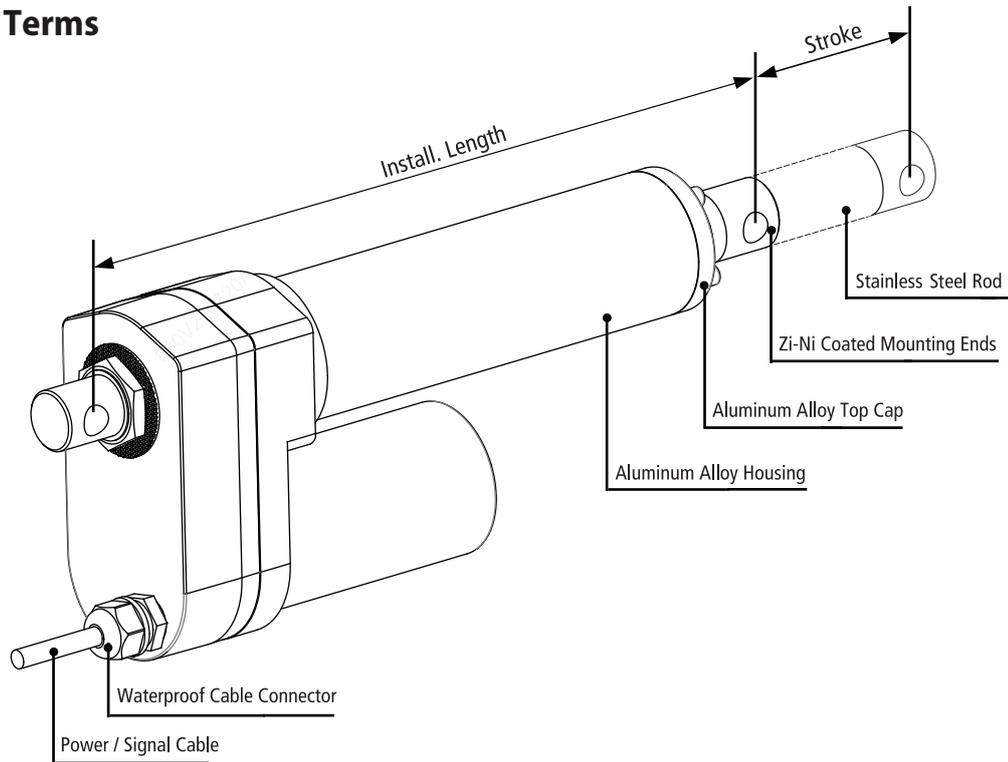
Linear Actuator



Part No.	Description	Quantity
100-123	Actuator	1
200-45	Mounting bracket	2
300-78	Washer	4
400-90	Nut	4
500-11	Pin	2
600-22	Spring	1
700-33	Seal	2
800-44	Label	1
900-55	Cap	1
1000-66	Kit	1

1	Stroke	100mm
2	Stroke speed	10mm/s
3	Stroke capacity	2000N
4	Stroke force	200N
5	Stroke length	100mm
6	Stroke mounting end	100mm
7	Stroke mounting end	100mm
8	Wire connector	100mm
9	Limit switches	100mm
10	Preload	100mm
11	Preload rate	100mm
12	Preload rate	100mm
13	Preload rate	100mm
14	Preload rate	100mm
15	Preload rate	100mm
16	Preload rate	100mm
17	Preload rate	100mm
18	Preload rate	100mm

Glossary of Terms



Stroke	How far the rod extends outwards from the body. The difference between fully extended length and fully retracted length. [Customizable]
Install. Length	The fully closed size. [Customizable]
Front Mount. End	Optional.
Rear Mount. End	Optional.
Mount. Holes	Can be rotated by 90°.
Dynamic Force	The max force that actuator is able to carry when it is moving.
Selflocking	The max force that linear actuator is able to hold when it stops.
Weather Protection	IP XX. The first digit: dust protection. The second digit: liquid protection. Please refer to [Table 1].
Duty Cycle	Continuous working time 'a', rest time 'b'. Duty cycle is $a/(a+b) \times 100\%$. 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 direction of motor. Check [Table 1] to see if it is available.
Potentiometer	Potentiometer is a three-terminal variable resistor with a rotating contact which is used to measure the displacement of actuators. Check [Table 1] to see if it is available.
Manual Override	Can be used to extend or retract the actuator without power for emergency. Check [Table 1] to see if it is available.

Product Specifications

Color	<input type="checkbox"/> Silver	<input checked="" type="checkbox"/> Black	<input type="checkbox"/> Customized			
Lead Screw	<input checked="" type="checkbox"/> Acme Screw	<input checked="" type="checkbox"/> Ball Screw				
Operation Mode	<input checked="" type="checkbox"/> Electrical	<input type="checkbox"/> Electrical + Manual				
Application	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Furniture	<input type="checkbox"/> Medical			
Operational Temp.	<input type="checkbox"/> 5 to 40°C	<input type="checkbox"/> -10 to 65°C	<input checked="" type="checkbox"/> -40 to 65°C			
Operating Noise	<input type="checkbox"/> ≤45 dB	<input checked="" type="checkbox"/> ≤50 dB	<input type="checkbox"/> ≤65 dB			
Stroke Range	<input type="checkbox"/> 50-600mm	<input checked="" type="checkbox"/> 600-1,000mm				
Dynamic Load	<input type="checkbox"/> ≤1,200N	<input type="checkbox"/> ≤2,000N	<input checked="" type="checkbox"/> ≤6,000N	<input type="checkbox"/> ≤8,000N	<input type="checkbox"/> ≤12,000N	<input type="checkbox"/> ≤20,000N
Duty Cycle	<input type="checkbox"/> 10%	<input checked="" type="checkbox"/> 20%	<input type="checkbox"/> 25%	<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 checked="" type="checkbox"/> None	<input type="checkbox"/> Clutch	<input 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 checked="" type="checkbox"/> IP66	
Position Feedback	<input 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"/> Reed Switches
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



[Table 1]

Options for MLA-27 Other Models

Technical Data

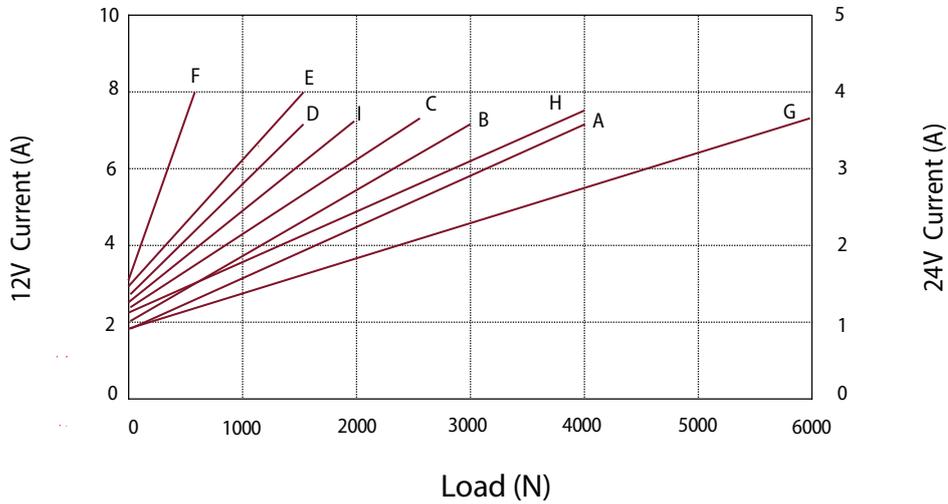
Code	Lead Screw	Max. Dynamic Load ^②	Max. Self-locking Load	Reduction Ratio	Pitch	Speed±10% ^① (mm/s)		Max. Stroke (No Pot) ^③	Max. Stroke (With Pot) ^③
		(N)	(N)	-	(mm)	Free Load	Full Load	(mm)	(mm)
A	Acme Screw	4,000	6,000	30:1	4	6.5	4	800	265
B		3,000	5,000	20:1	4	10	6.5	1,000	265
C		1,500	3,000	10:1	4	20	12	1,000	265
D		2,500	3,500	30:1	7.5	13	7	1,000	500
E		1,500	2,500	20:1	7.5	18	11	1,000	500
F		600	1,000	10:1	7.5	32	23	1,000	500
G	Ball Screw	6,000	8,000	30:1	4	6.5	4.5	500	265
H		4,000	6,000	20:1	4	10	7	800	265
I		2,000	3,000	10:1	4	20	15	1,000	265

[Table 2]

- ① Measurements are made with actuators in connection with stable power supplies and ambient temperature at 20°C.
- ② Example: When real load is 10,000N, choosing code "D" is fine. You can also choose "B" or "A", which come with an increased load buffer, higher safety factors and extended product service time.
- ③ Many factors affect the "Customizable Maximum Stroke," including load, speed, and force direction. Actual application scenarios should be considered. Please contact cs@machmo.com for assistance if your required parameters are not listed.

1 = 12v

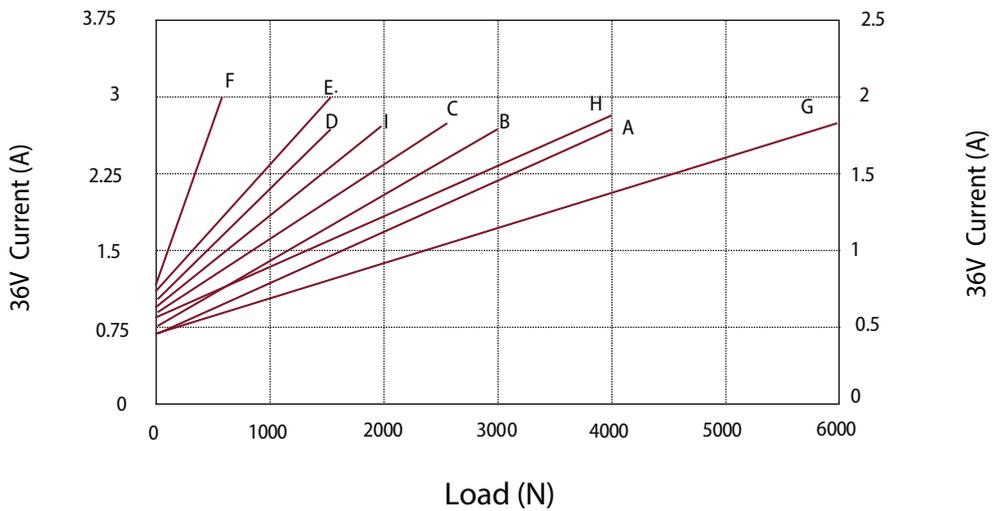
2 = 24v



[Table 3-1]

3 = 36v

4 = 48v

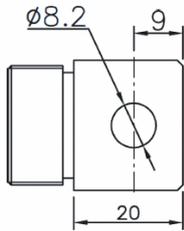


[Table 3-2]

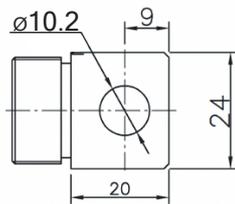
Front End Mounting

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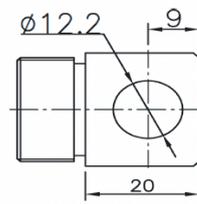
F01



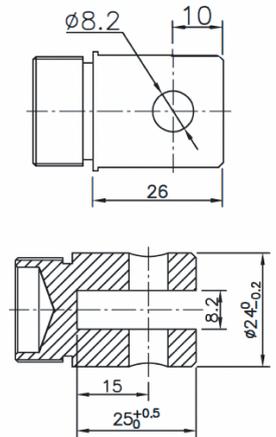
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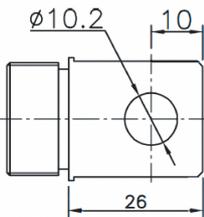
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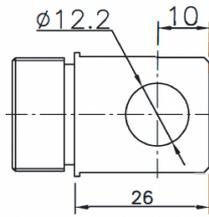
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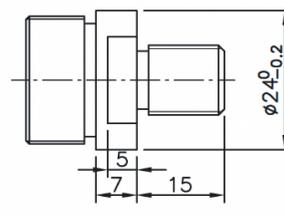
F05



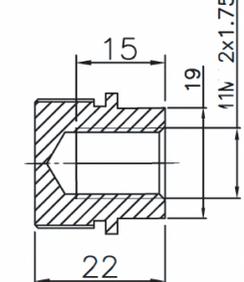
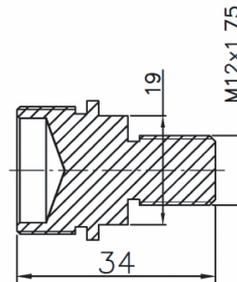
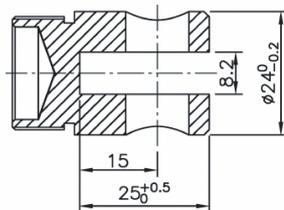
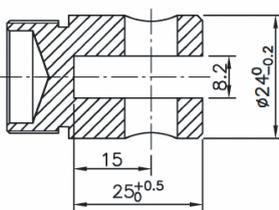
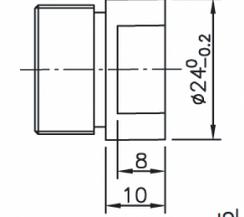
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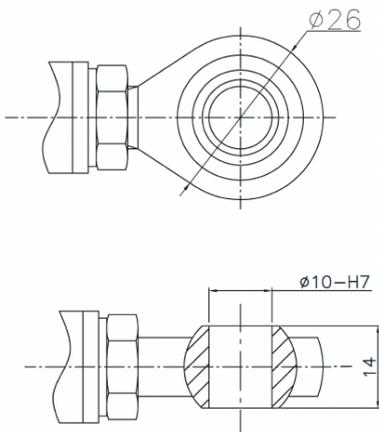
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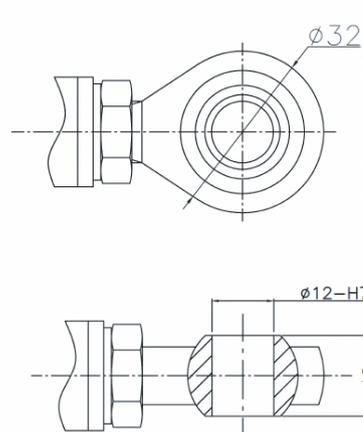
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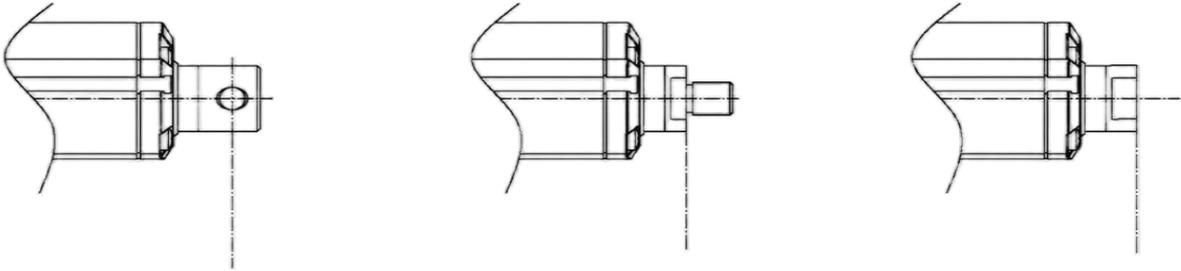
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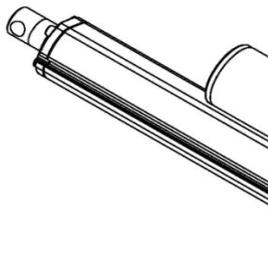
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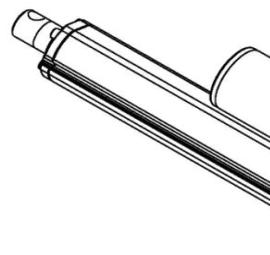
2. Start of Installation Length



3. Hole Direction



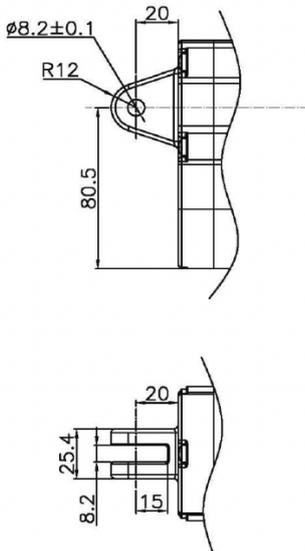
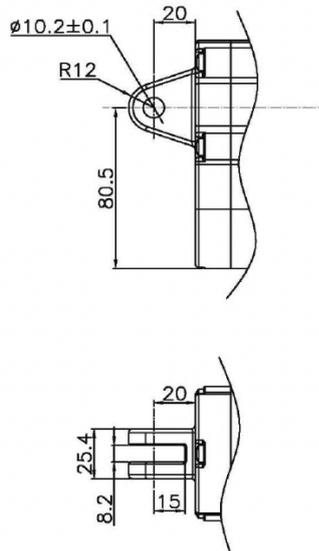
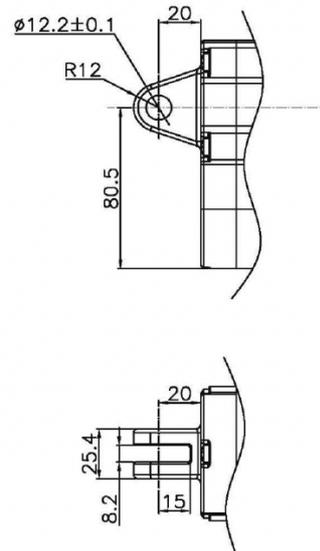
1 = 90°



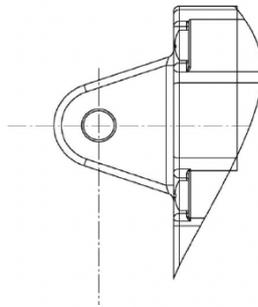
2 = 0°

Rear End Mounting

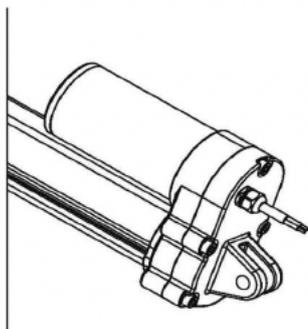
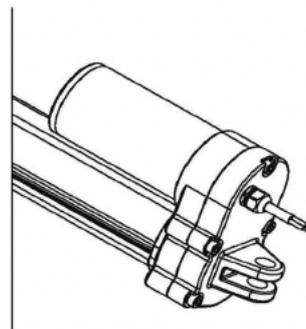
1. Please contact our sales team if none of the below options meet your requirements.

R01

R02

R03


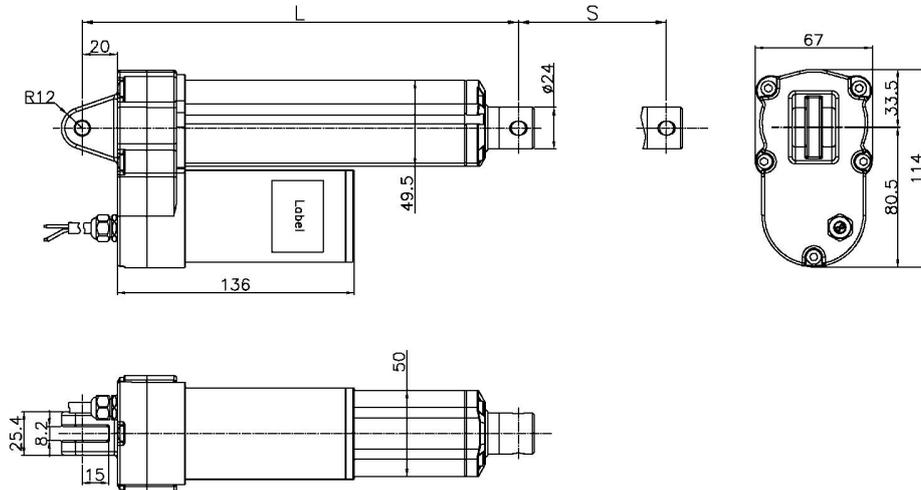
2. End of Installation Length



3. Hole Direction


1 = 90°

2 = 0°

Overall Dimensions (Without Potentiometer)



A. Mounting Ends VS Installation Length

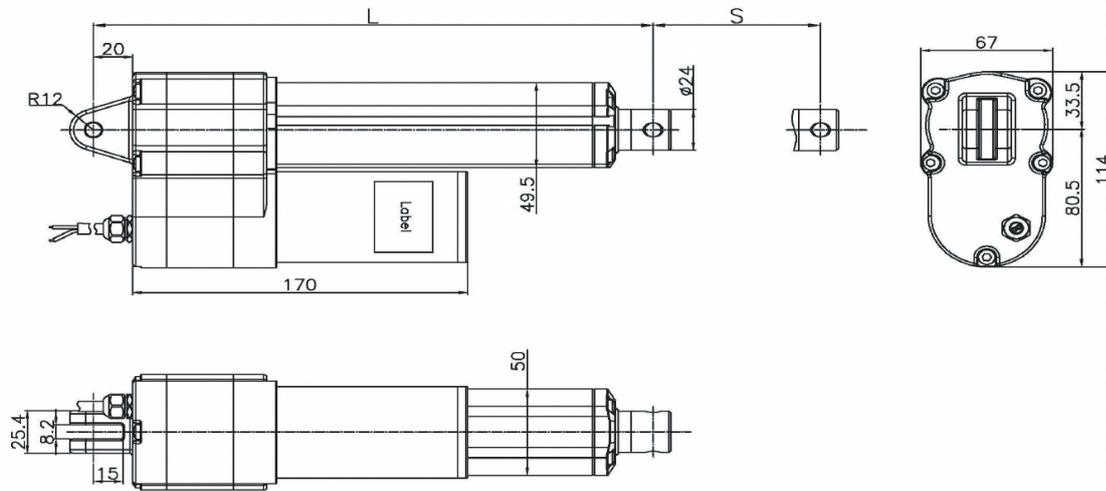
Front Mount Ends	Rear Mount Ends
	R01, R02, R03
F01, F02, F03 F07, F08	Acme: $L \geq S + 130\text{mm}$ Ball Screw: $L \geq S + 150\text{mm}$
F04, F05, F06	Acme: $L \geq S + 130\text{mm}$ Ball Screw: $L \geq S + 150\text{mm}$
F09, F10	Acme: $L \geq S + 165\text{mm}$ Ball Screw: $L \geq S + 185\text{mm}$

[Table 4]

B. Stroke VS Installation Length

Stroke (S) (mm)	Installation Length (L) (mm)
50 - 299	+0
300 - 499	+30
500 - 1,000	+50

[Table 5]

Overall Dimensions (Built-In Potentiometer)

A. Mounting Ends

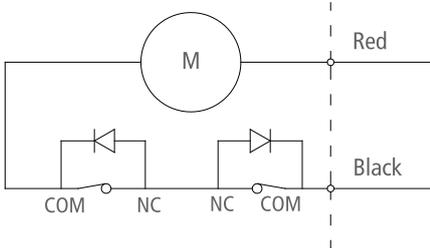
Front Mount Ends	Rear Mount Ends
	R01, R02, R03
F01, F02, F03 F07, F08	Acme: $L \geq S + 165\text{mm}$ Ball Screw: $L \geq S + 185\text{mm}$
F04, F05, F06	Acme: $L \geq S + 170\text{mm}$ Ball Screw: $L \geq S + 185\text{mm}$
F09, F10	Acme: $L \geq S + 200\text{mm}$ Ball Screw: $L \geq S + 220\text{mm}$

[Table 6]

Signal Feedback

0. Standard Limit Switches Without Signal Feedback

The standard MLA-27 comes with Limit Switches that automatically shut off motor power at the end of its travel.

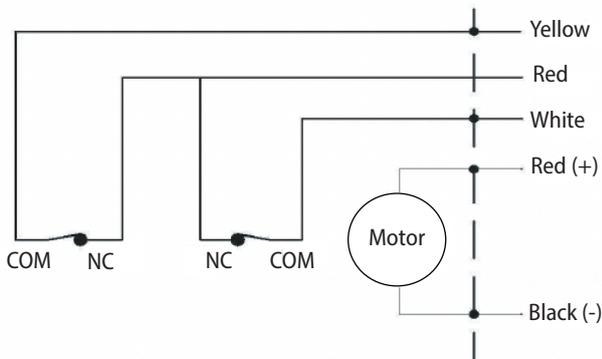


Wiring		
	Black	Red
Extend	-	+
Retract	+	-

[Table 7]

1. Endstop Signal

The MLA-27 can be equipped with endstop signal output, but it will not auto-stop at either end of travel path.



Power Wire Coding		
	Black	Red
Extend	-	+
Retract	+	-
Signal Wire Coding		
Red	Extend / Retract limit, N.C.	
Yellow	Extend limit. COM.	
White	Retract limit. COM.	

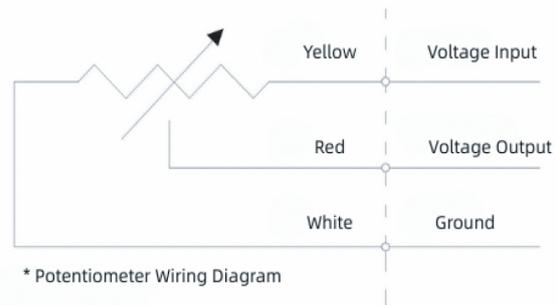
[Table 8]

2. Potentiometer

Transmission Code	Max. Stroke	Resistance per 1mm / Stroke
A, B, C, G, H, I	265mm	0.038K Ω
D, E, F	500mm	0.02K Ω

Note: Potentiometer resistance starts at 0 K Ω

[Table 9]



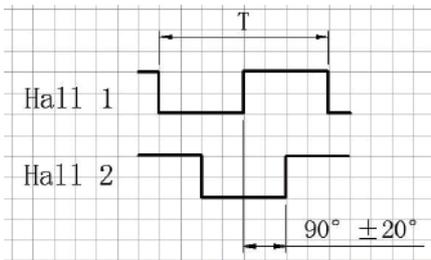
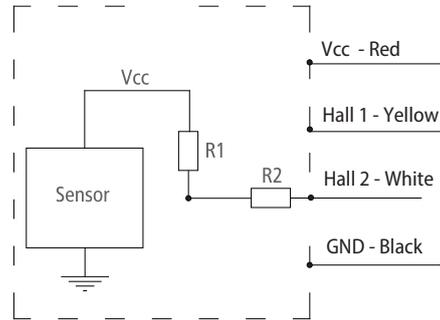
* Potentiometer Wiring Diagram

[Table 10]

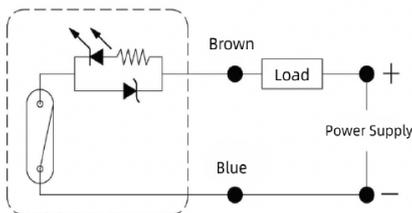
3. Hall Sensor (Standard Dual-Sensor)

Code	Pulse Equivalent per Sensor (pulse/mm)	
A	4 pole pairs (standard)	29.6
B		19.3
C		9.5
D		15.7
E		10.3
F		5.0
G		29.6
H		19.3
I		9.5

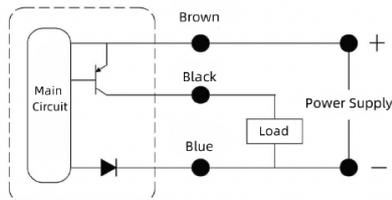
[Table 11]



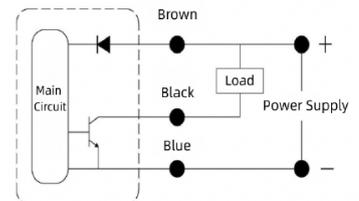
4. External Magnetic Proximity Switch (Typically Open, Standard)



Two-Wire System



Three-Wire System (PNP)



Three-Wire System (NPN)

Product Inquiry Table

<input type="checkbox"/>	Voltage	1 = 12VDC, 2 = 24VDC, 3 = 36VDC, 4 = 48VDC
<input type="checkbox"/>	Load & Speed	See [Table 2]
<input type="checkbox"/>	Stroke (mm)	Please contact us for assistance if required stroke is out of range.
<input type="checkbox"/>	Installation Length (mm)	See Table [4] - [6]
<input type="checkbox"/>	Front Mount. End	F01 - F10, or FX = Custom
<input type="checkbox"/>	Rear Mount. End	R01-R03, or RX = Custom
<input type="checkbox"/> <input type="checkbox"/>	Mount. Hole Direction	Front: 1 = 90°, 2 = 0°, Rear: 1 = 90°, 2 = 0°
<input type="checkbox"/>	Signal Feedback	0 = None, 1 = Endstop Signal, 2 = Potentiometer, 4 = External Magnetic Switch
<input type="checkbox"/>	Potentiometer	0 = None, 1 = Integrated Potentiometer
<input type="checkbox"/>	External Magnetic Proximity Switch	0 = 2 Wire System, 1 = 3 Wire (PNP) Type, 2 = 3 Wire (NPN) Type
<input type="checkbox"/>	Cable Length	1 = 600mm, 2 = 1,000mm, 3 = 1,500mm, 4 = 2,000mm X = Custom
<input type="checkbox"/>	Connector	0 = 2-core bare wire, 1 = Logic Level Control, 2 = Go with SK Control, S = Synchronized Control, X = Custom
Application	Working Temperature	1 = -40°C to 65°C
	Working Frequency	Estimated work cycles per day
	End Use	Indoor or Outdoor