Mach Motion Products

MLA-33P Industrial Linear Actuator

2026 Catalog

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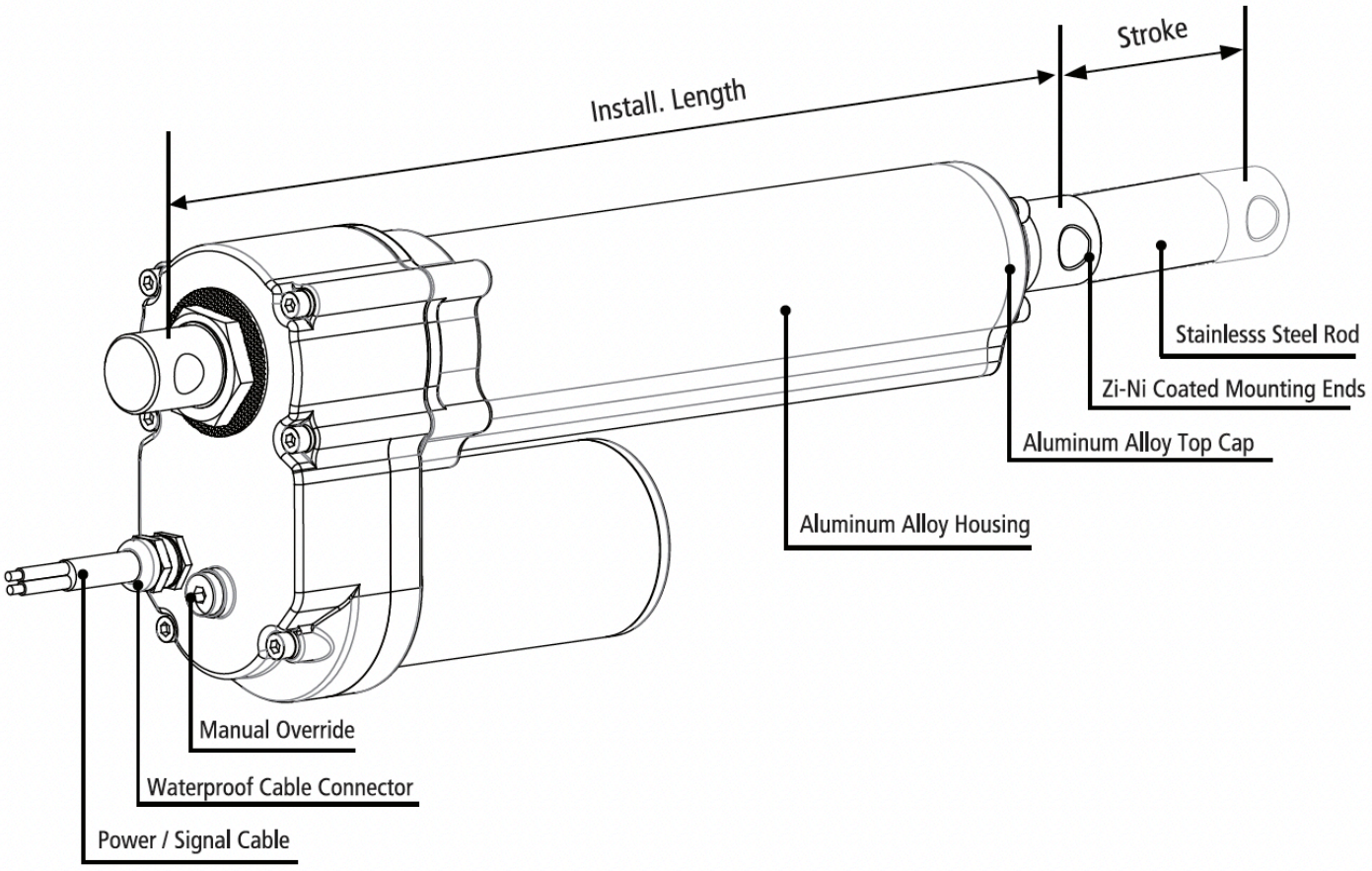
Mach Motion Products

• Glossary of Terms



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.
Rear Mounting End	Optional.
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.
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.

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• General Specifications

Color	_ Silver	X Black	_ Custom			
Lead Screw	X Acme Screw	_ Ball Screw				
Operation Mode	_ Electrical	X Electrical + Manual				
Application	X Industrial	_ Furniture	_ Medical			
Operational Temp.	_ 5°C to 40°C	-10°C to 65°C	X -40°C to 65°C			
Operating Noise	_ ≤45dB	_ ≤50dB	X ≤65dB			
Stroke Range	X 50 to 600mm	X 600 to 1,000mm				
Dynamic Load	_ ≤1,200N	_ ≤2,000N	_ ≤4,000N	X ≤7,000N	≤12,000N	_ ≤20,000N
Duty Cycle	_ 10%	_ 20%	X 25%*	_ ≤50%	_ 100%	
Motor Type	X Brushed DC	_ Stepper Motor	_ Brushless	_ Servo Motor		
Overload Protection	_ None	X Clutch	_ Electronic	_ Thermistor		
Weather Protection	_ IP20	_ IP43	_ IP54	X IP65	_ IP66	_ IP67
Position Feedback	X None	X Endstop Signal	X Hall Sensor	_ Potentiometer	_ Encoder	X Reed Switches
Input Voltage	X 12VDC	X 24VDC	X 36VDC	X 48VDC	_ 110VAC	_ 220VAC

*Note: Do not exceed 4 minutes continuous working at full load at 20°C.

[Table 1]

X Options for MLA-33P _ Available Other Models

• Technical Parameters

Code	Max. Dynamic Load (*See Note 2)	Max. Self-Locking Load	Reduction Ratio	Pitch	Speed +/-10% (mm/sec) (*See Note 1)		Max. Stroke (*See Note 2)
	(N)	(N)		(mm)	Free Load	Full Load	(mm)
A	7,000	10,000	40:1	3.17	5.5	4.0	1,000
B	7,000	10,000	40:1	5	8.5	7.0	1,000
C	5,000	8,000	20:1	3.17	11.0	9.5	1,000
D	4,000	7,000	20:1	5	17.0	14.0	1,000
E	3,000	5,000	10:1	3.17	22.0	18.0	1,000
F	2,000	4,000	10:1	5	35.0	28.5	1,000

[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 2,400N, choosing code "D" is recommended. You can also choose "C", "B", or "A," 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.

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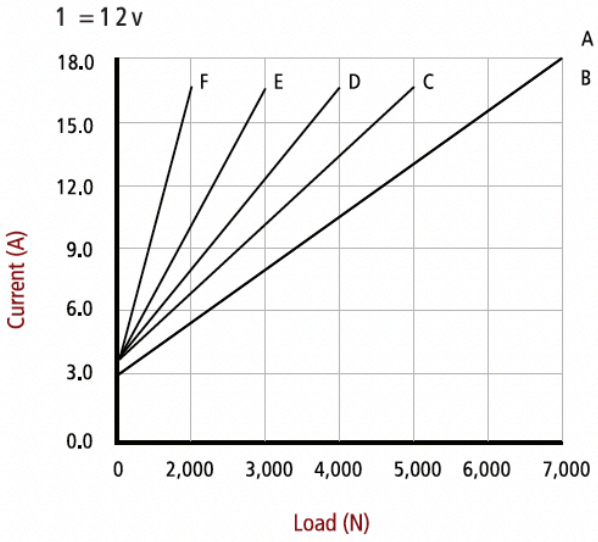
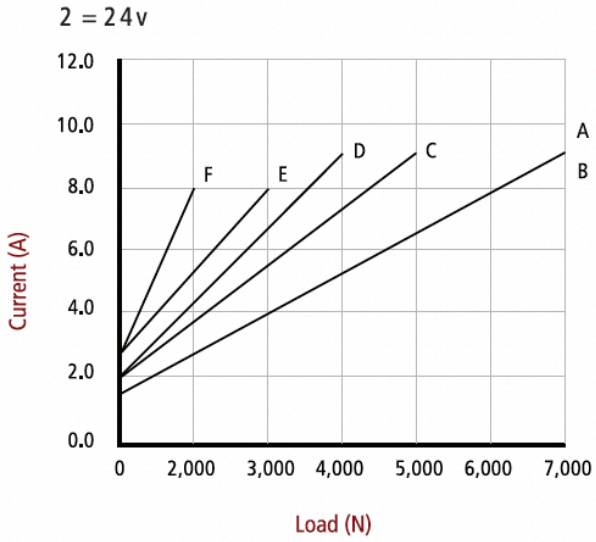
• Performance

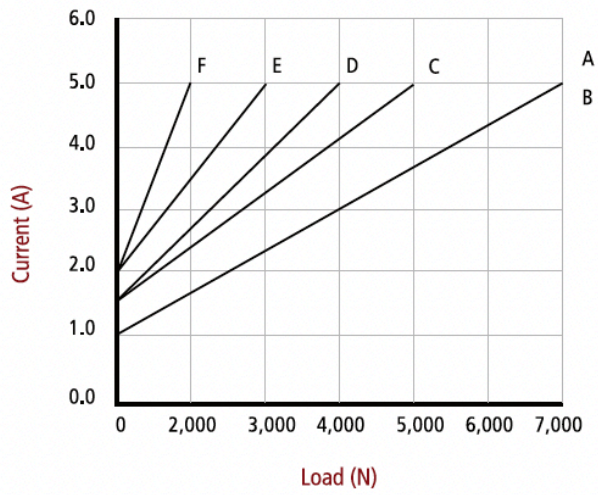
1 = 12v



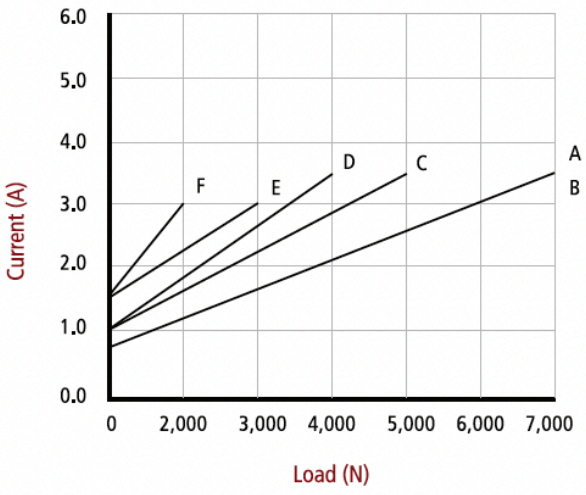
2 = 24v

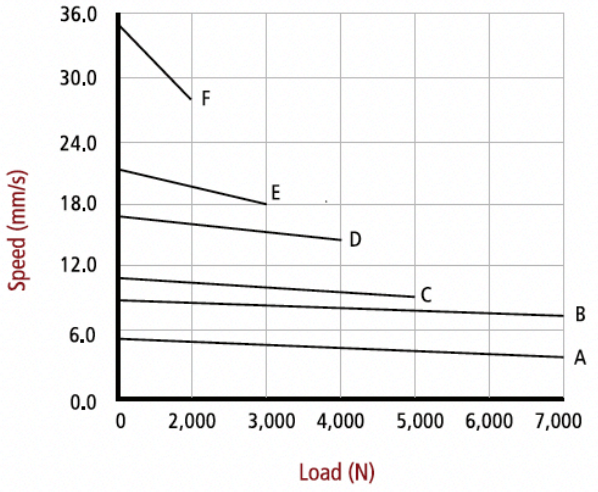


3 = 36v



4 = 48v

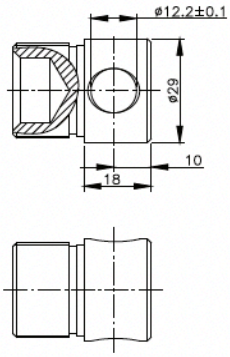




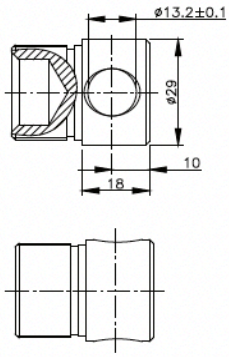
*** Note: Measurements are made with Actuators in Connection with Stable Power Supplies and Ambient Temperature of 20℃.**

•Front Mounting End

1. Please contact cs@machmo.com if none of the options below meet your requirements.



F01



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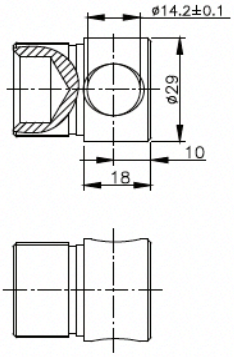
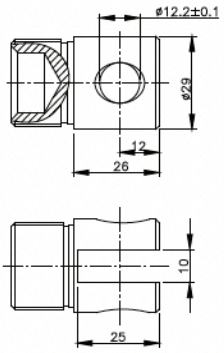
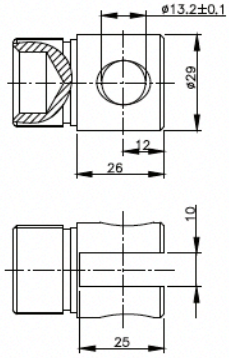


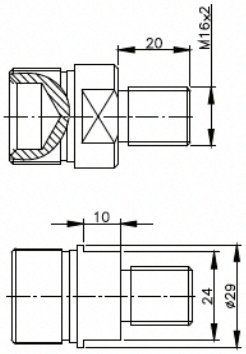
F03



F04



F05



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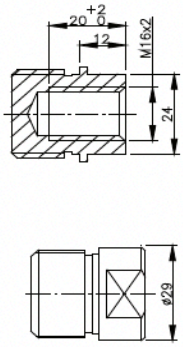

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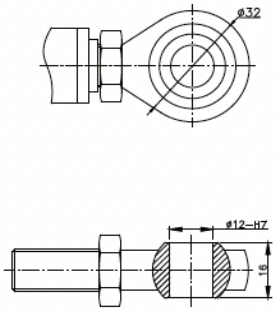
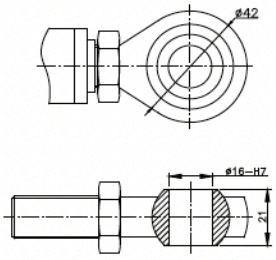
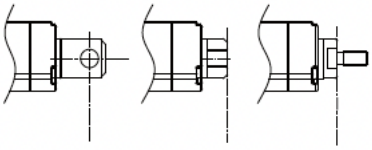


F08

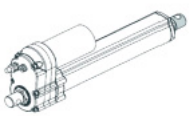


F09

2. Start of Installation Length



3. Hole Directions

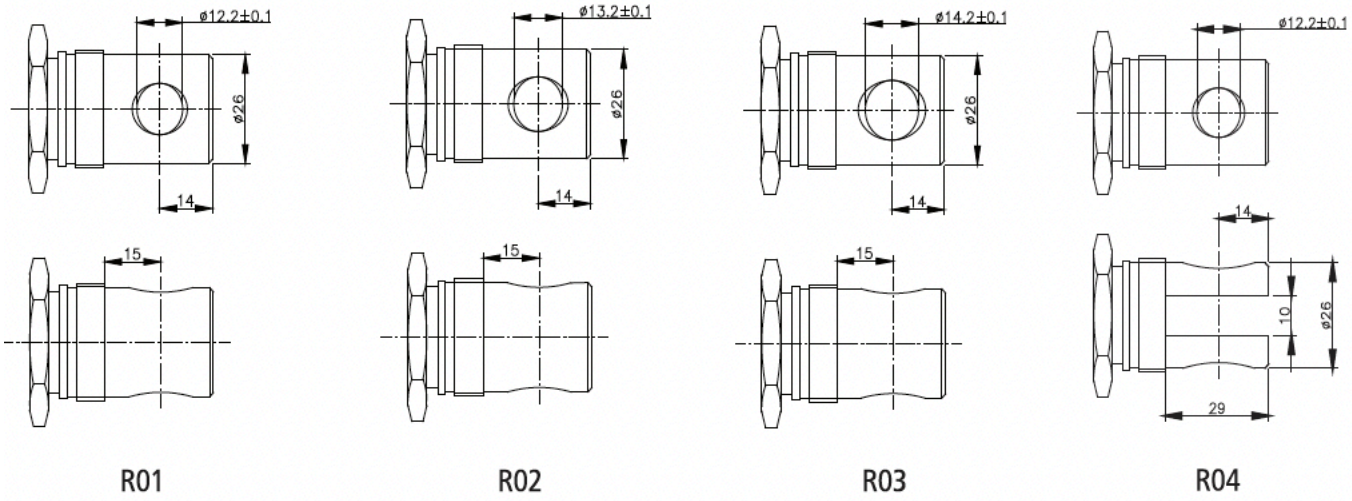


1 = 90°

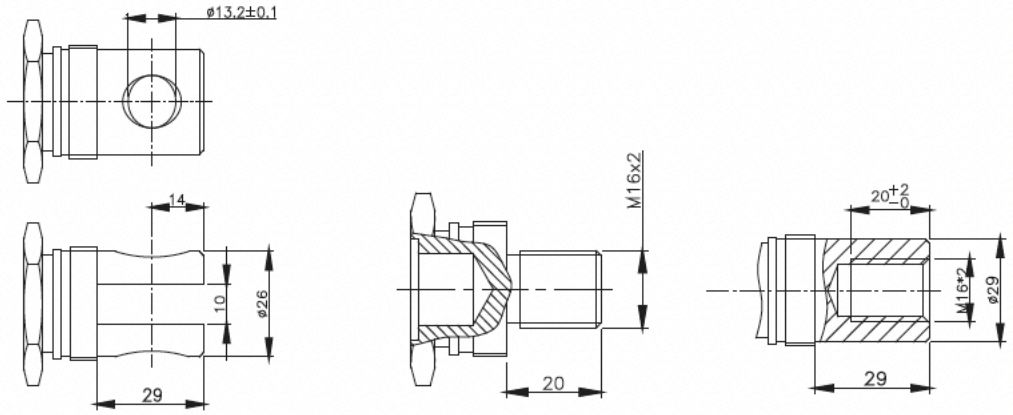
2 = 0°

• Rear Mounting End

1. Please contact cs@machmo.com if none of the options below meet your requirements.

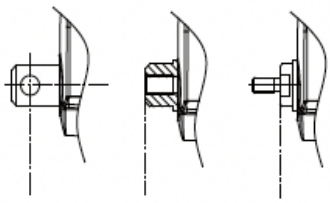


R01 R02 R03 R04

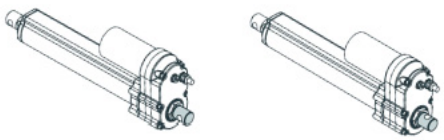


R05 R06 R07

2. End of Installation Length



3. Hole Directions



1 = 90° 2 = 0°

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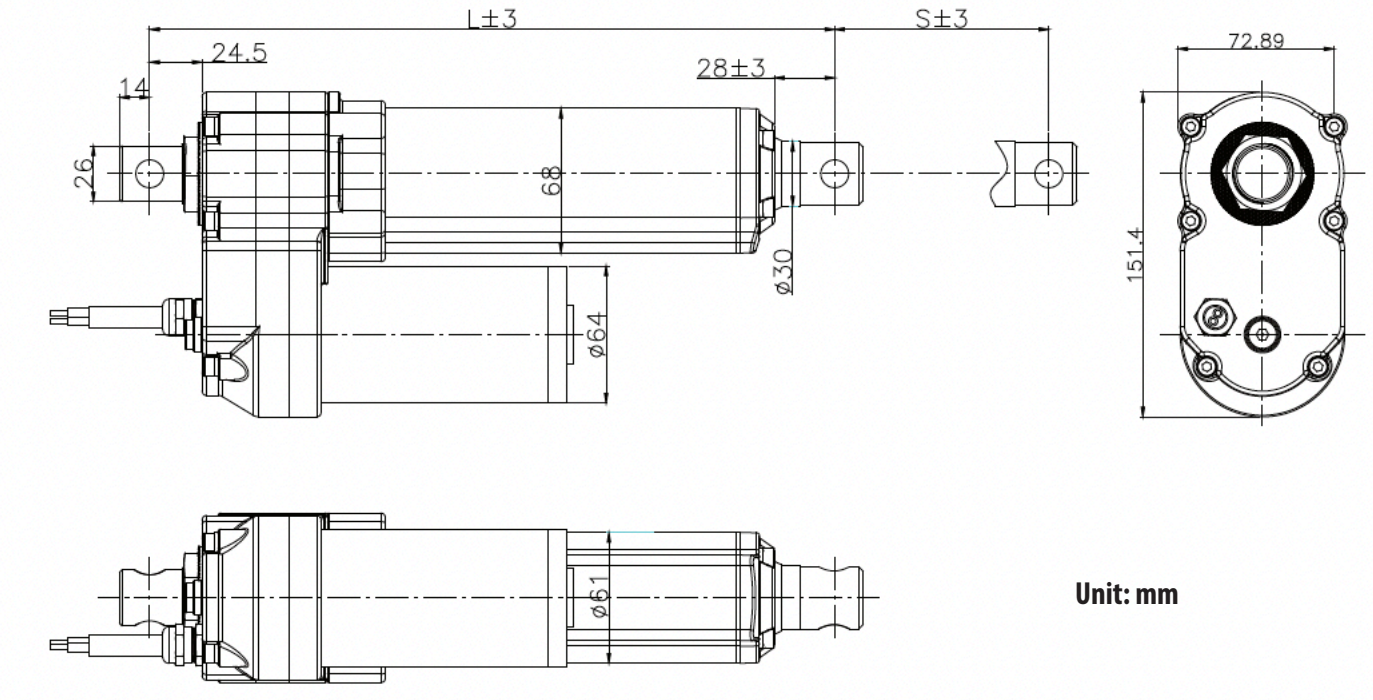
• Product Dimensions



Unit: mm

A. Mounting Ends VS. Installation Length

Front Mounting Ends	Rear Mounting Ends
	R01, R02, R03, R04, R05, R06, R07
F01, F02, F03, F04, F05, F06, F07	A ≥ S+200mm (min. 250mm)
F08, F09	A ≥ S+250mm (min. 280mm)

[Table 3]

B. Stroke VS. Installation Length

Stroke (S) (mm)	Installation Length (L) (mm)
50 - 299	+ 0
300 - 599	+ 50
≥600	+ 100

[Table 4]

How to Calculate "Installation Length":

S = Stroke, L = Installation Length
L ≥ A + B

Example:

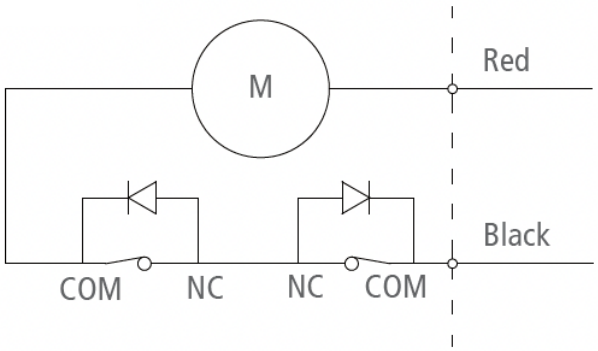
Front Mount	Rear Mount	S (mm)	A (mm)	B (mm)	L ≥ A + B (mm)
F08	R01	300	300 + 250	+50	≥600

[Table 5]

- **Signal Feedback**

0. Standard Limit Switches Without Signal Feedback

Standard MLA-33 comes with limit switches that automatically shut off motor at the end of travel path.

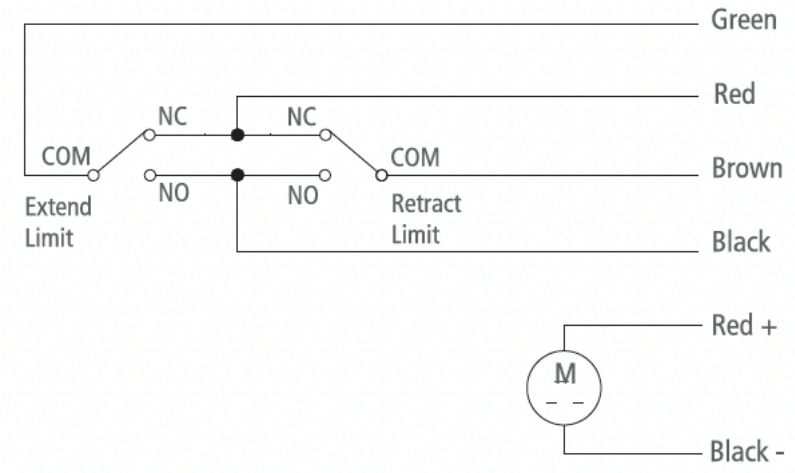


Wire Type		
	Black	Red
Extend	-	+
Retract	+	-

[Table 6]

1. Endstop Signal

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

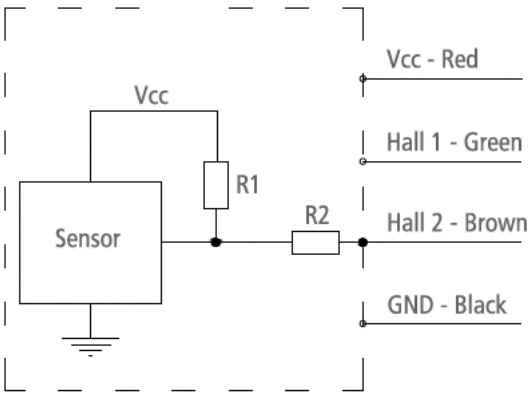


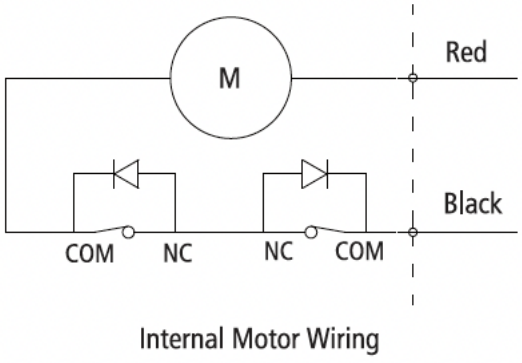
Wire Type		
	Black	Red
Extend	-	+
Retract	+	-
Wire Type		
Black	Extend or Retract Limit, N.O.	
Red	Extend or Retract Limit, N.C.	
Green	Extend Limit, COM.	
Brown	Retract Limit, COM.	

[Table 7]

2. Hall Effect Sensor

Standard Dual-Sensor





Internal Motor Wiring

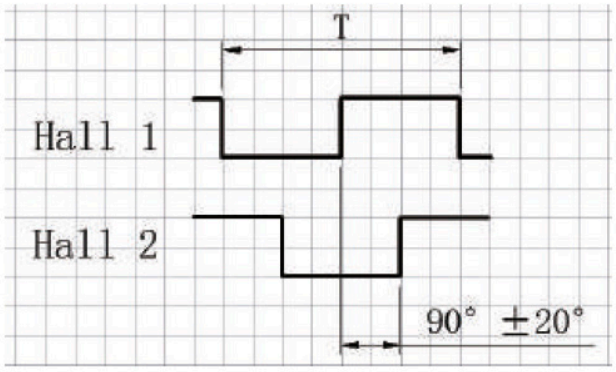
• Signal Feedback

2. Hall Effect Sensor (Continued)

Standard Dual-sensor

Code	Pulse Equivalent per Sensor (pulse/mm)	
A	4 Pole Pairs (Standard	50.47
B		32.00
C		25.24
D		16.00
E		12.62
F		8.00

[Table 8]



Oscillogram with Two Sensors

*** Note: Power Supply (V) = 5 ~ 15V**

3. Reed Switch

Standard N.O. contact. Optional N.C. contact.

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• Product Inquiry Table

Selection	Specification	Available Options			
	Voltage	1 = 12V	2 = 24V	3 = 36V	4 = 48V
	Load and Speed	See [Table 2]			
	Stroke (mm)	Please contact cs@machmo.com if required stroke is out of range.			
	Installation Length (mm)	See [Tables 3-5]			
	Front Mounting End	F01 - F09		or FX = Custom	
	Rear Mounting End	R01 - R07		or RX = Custom	
	Mounting Hole Direction	Front 1 = 90°	Front 2 = 0°	Rear 1 = 90°	Rear 2 = 0°
	Signal Feedback	0 = None	1 = Endstop Signal	2 = Hall Sensor	3 = Reed Switches
	Cable Length	1 = 500mm	2 = 1,000mm	X = Custom	
	Connector	0 = Tinned Bare Wires	1 = Go with KZ Control	X = Custom	
Application	Working Temperature	1 = -10℃ ~ 65℃		2 = -40℃ ~ 65℃	
	Working Frequency	Estimated Work Cycles Per Day			
	End Use	Indoor or Outdoor?			