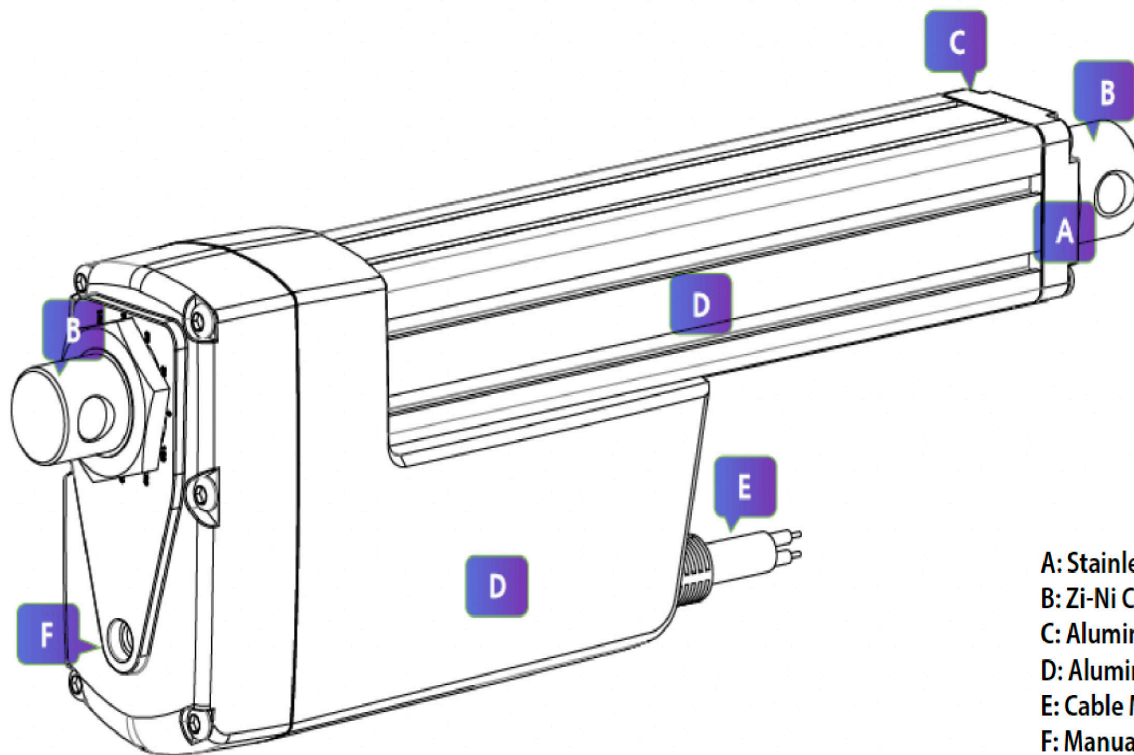


MLA-35 Industrial Linear Actuator

2026 Catalog



• Glossary of Terms



- A: Stainless Steel Piston Rod
- B: Zi-Ni Coated Mounting Ends
- C: Aluminum Alloy Enclosure Top Cap
- D: Aluminum Alloy Housing
- E: Cable Module
- F: Manual Override

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"/> Silver Tube, Black Housing		<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"/> ≤17,000N	<input type="checkbox"/> ≤20,000N
Duty Cycle	<input type="checkbox"/> 10%	<input type="checkbox"/> 20%	<input checked="" type="checkbox"/> 20-35%*	<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 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	<input type="checkbox"/> IP67
Position Feedback	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Endstop Signal	<input checked="" type="checkbox"/> Hall Sensor	<input 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-35 Available Other Models

• Technical Parameters

Code	Lead Screw	Duty Cycle	Max. Dynamic Load	Max. Self-Locking Load	Pitch	Speed +/-10% (mm/sec)		Max. Stroke at Full Capacity
			(*See Note 2)	(N)		(mm)	(*See Note 1)	(*See Note 2)
			(N)	(N)	(mm)	Free Load	Full Load	(mm)
A	Ball Screw	20%	17,000	20,000	5	6.5	5	600 ²
B			13,500	15,000	5	9	6.5	1,000
C		35%	10,000	12,000	5	14	9	1,000
D			7,500	10,000	10	18	13	1,000
E			5,000	8,000	10	28	20	1,000
F	ACME Screw	20%	12,000	15,000	4	7	5	1,000
G			10,000	12,000	8	10	7	1,000
H			7,500	10,000	8	14	8	1,000
I			5,000	8,000	8	23	13	1,000
J			3,500	5,000	12	35	23	1,000

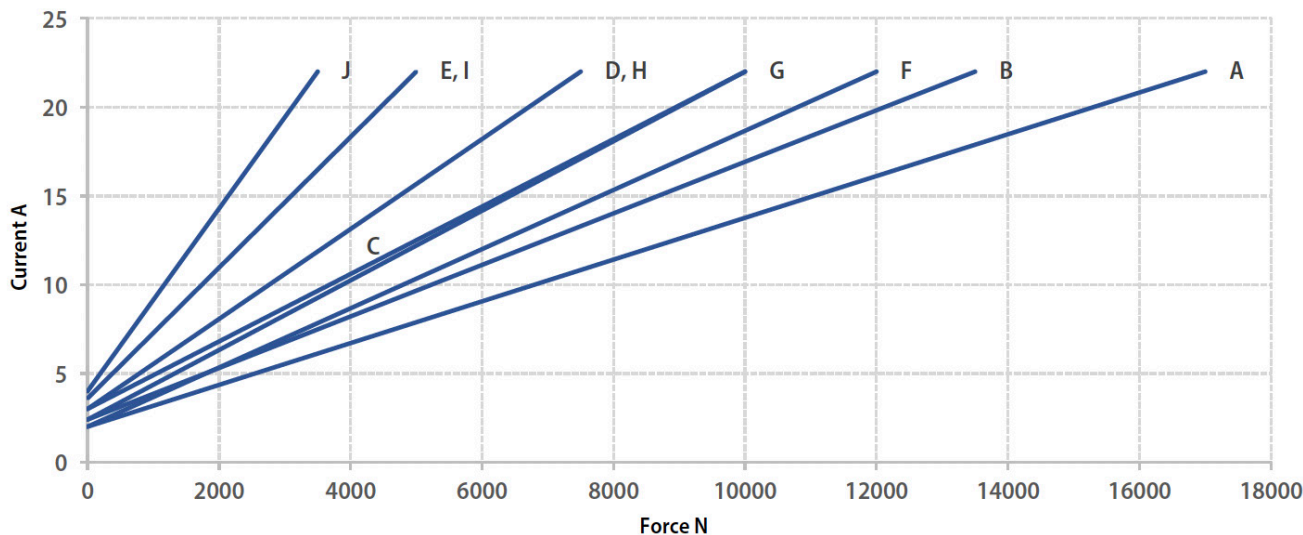
[Table 2]

*Notes:

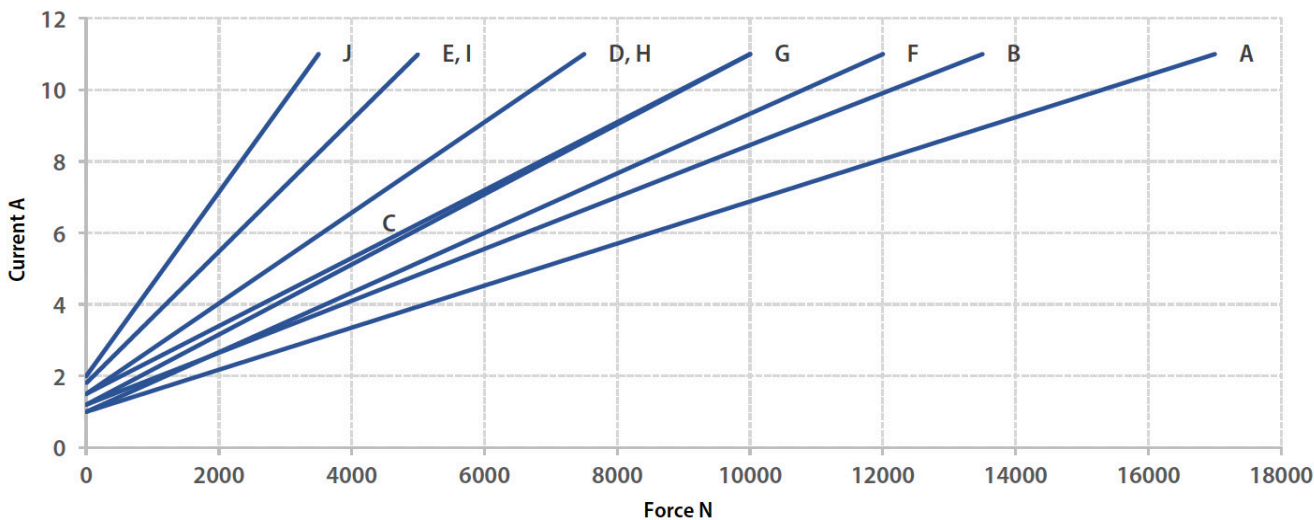
1. Measurements are made with actuators in connection with stable power supplies and ambient temperature of 20°C.
2. Code A comes with max. 600mm stroke at its full capacity. From stroke 601mm - 1,000mm, Code A can still function but with a reduced max. force of 14,500N.
3. For example, when real load is 9,000N, choosing code "C" or "G" is recommended. You can also choose "A", "B", 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

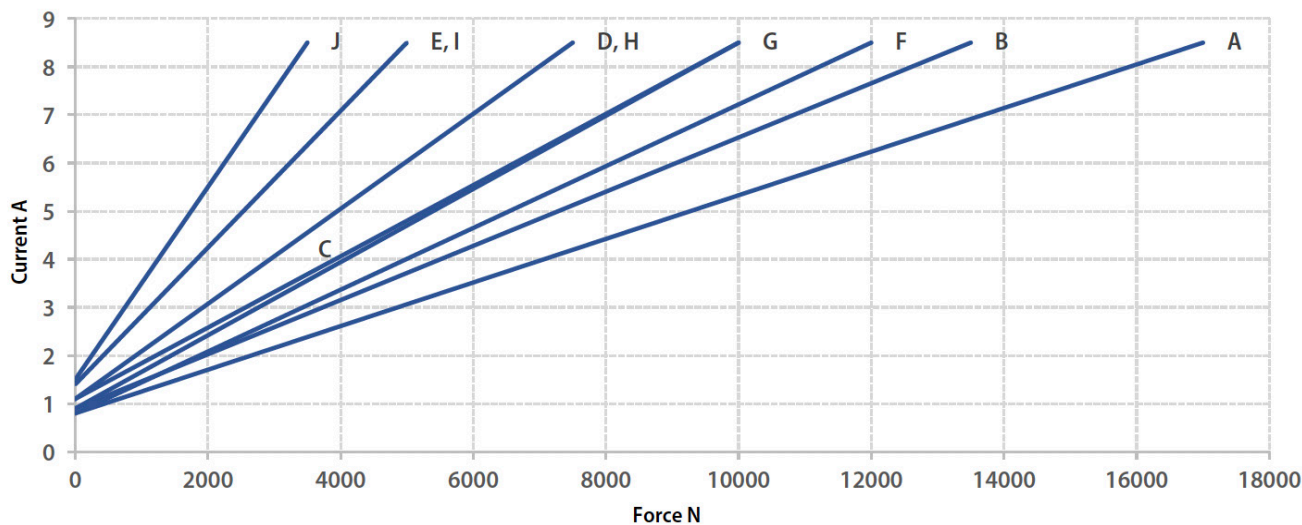
Code 1 : 12 VDC



Code 2 : 24 VDC



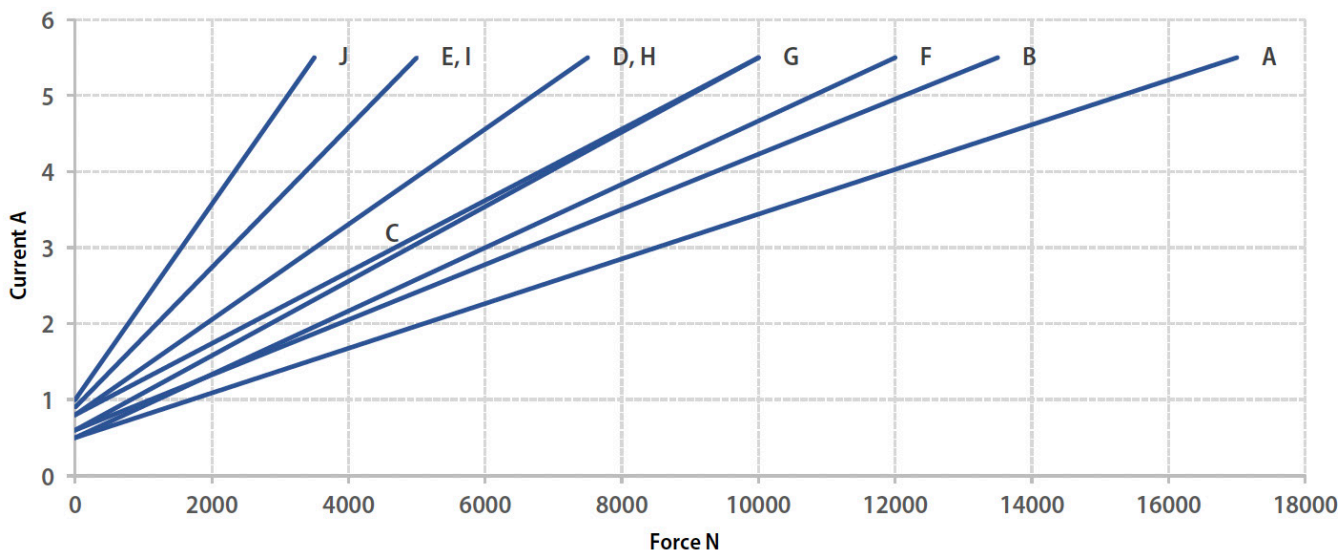
Code 3 : 36 VDC



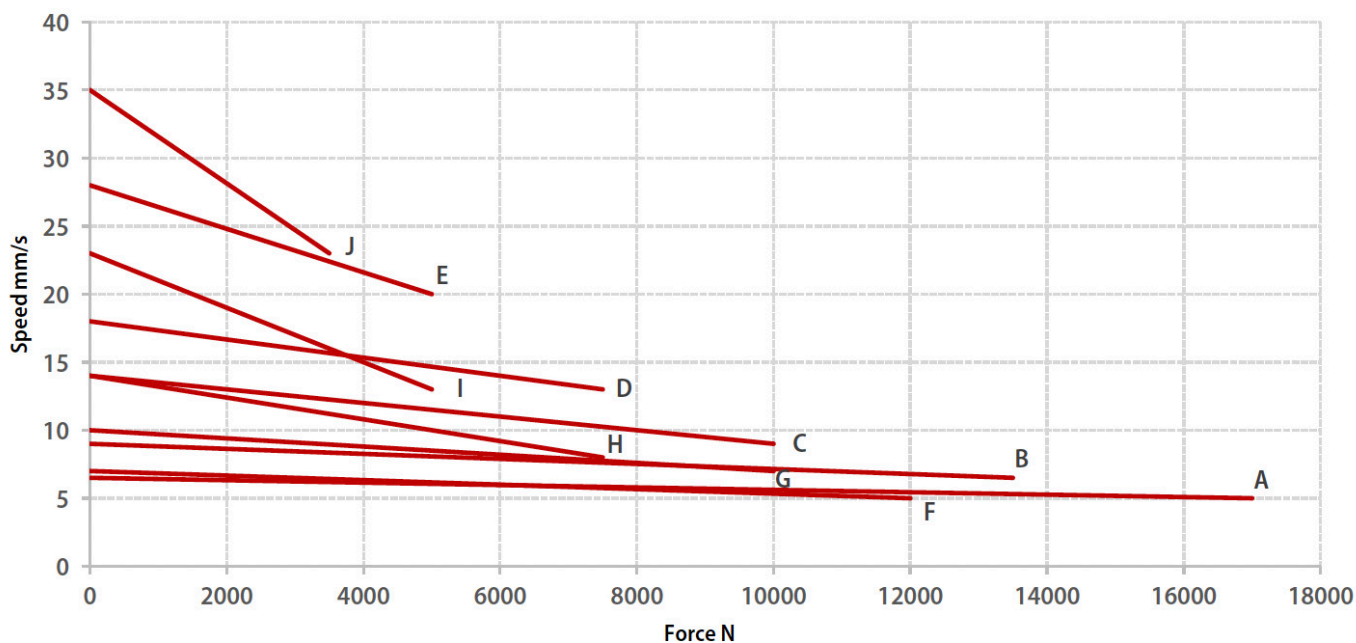
* Note: Measurements are made with Actuators in Connection with Stable Power Supplies and Ambient Temperature of 20°C.

• Performance (continued)

Code 4 : 48 VDC

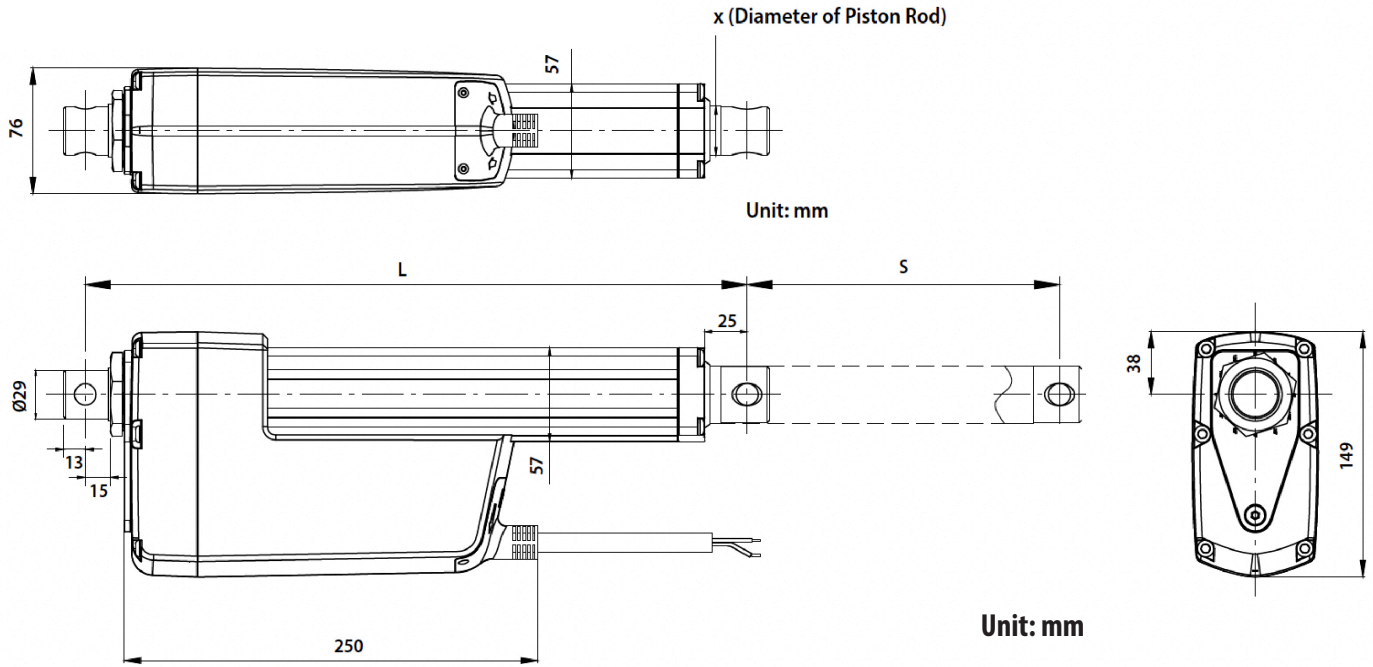


Speed vs. Force



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

• Product Dimensions



Diameter of Piston Rod "X"

Code	Stroke (S) (mm)	
	50 - 600	601 - 1,000
A, B	Ø35	Ø35
C - E	Ø30 or Ø35 option	Ø35
F - J	Ø30	Ø30

[Table 3]

• Installation Size

Installation Size (L) ≥ a + b + c + d

Basic installation length is Stroke + 200mm. However, for safety considerations, an extra distance may be required based on different gearset options and stroke ranges to ensure the product can operate safely and achieve optimal performance. Additionally, the installation length calculation can also be influenced by the different styles of front and rear mounting ends that you select.

a. Basic Installation Length	
≥ Stroke + 200mm	

[Table 4-1]

b. Code	
A, B	+ 30
C - J	+ 0

[Table 4-2]

c. Stroke	
30 - 300mm	+ 0
301 - 600mm	+ 50
601 - 1,000 (*See Note 1)	+ 100

[Table 4-3]

d. Front / Rear Mounting Ends (*See Note 2)	
F01 - F12 (*See Note 3)	+ 0
F13 - F14 (*See Note 4)	+ 40
R01 - R07 (*See Note 1)	+ 0

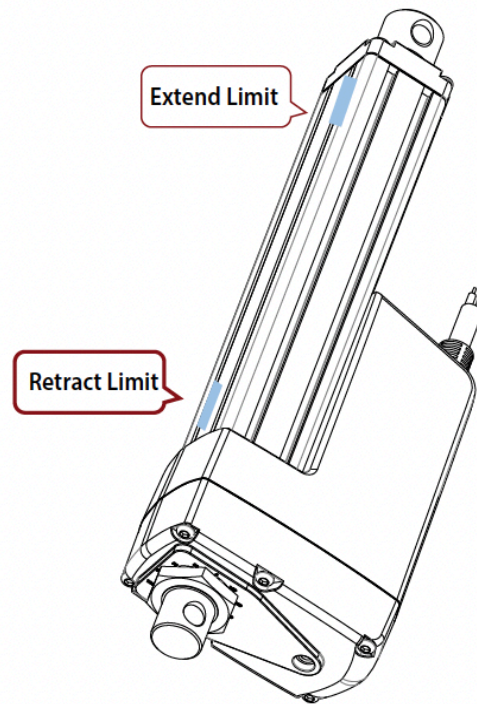
[Table 4-4]

*Notes:

1. Stroke 601-1,000mm, Code A is capable of 14,500N.
2. There are different definitions of installation length when it comes to different options for front and rear mounting ends - please refer to the next page.
3. When you choose from F01-F12 with Stroke ≤100mm, the minimum installation length is 300mm.
4. When you choose F13 or F14 with Stroke ≤100mm, the minimum installation length is 340mm.

Adjustable Stroke and Installation Length

If you require the product to be capable of adjusting the stroke and installation distance yourself after it leaves the factory, you can choose to include a magnetic switch. In this case, limiting the stroke at both ends must be done via controller.



How to Calculate “Installation Length”:

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

Example:

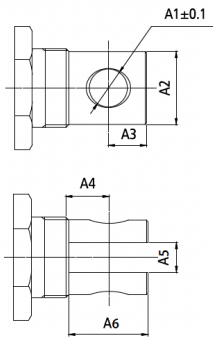
Stroke (mm)	Gearset Code	Front End Mount	Rear End Mount	$L \geq a + b + c + d$
400	A	F08	R01	$L \geq 400 + 200 + 30 + 50 + 40 = 720\text{mm}$
50	C	F01	R01	$L \geq 300^3$

[Table 5]

• Mounting Connectors

1. Front End Mounting

Type A: Thru Hole

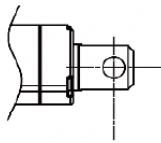


Diameter of Piston Rod "X" = Ø35 (See [Table3])

Code	A1	A2	A3	A4	A5	A6
F01	Ø12.2	Ø34	13.5	29	Without Slot	
F02	Ø13.2	Ø34	13.5	29		
F03	Ø14.2	Ø34	13.5	29		
F04	Ø12.2	Ø34	13.5	29	10	27.5
F05	Ø13.2	Ø34	13.5	29	10	57.5

[Table 6]

Definition of Installation Length:

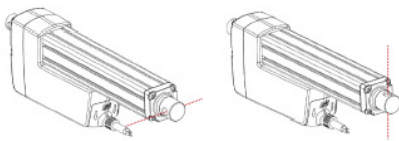


Diameter of Piston Rod "X" = Ø30 (See [Table3])

Code	A1	A2	A3	A4	A5	A6
F06	Ø12.2	Ø29	13.5	29	Without Slot	
F07	Ø13.2	Ø29	13.5	29		
F08	Ø14.2	Ø29	13.5	29		
F09	Ø12.2	Ø29	13.5	29	10	27.5
F010	Ø13.2	Ø29	13.5	29	10	57.5

[Table 7]

Orientation



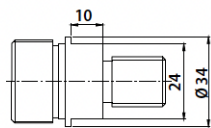
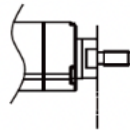
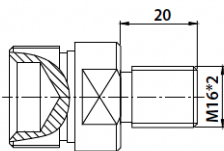
Code 1 : 90°

Code 2 : 0°

Type B: Male Thread

Code F11

Definition of Installation Length:

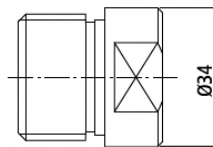
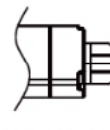
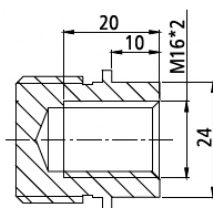


Unit: mm

Type C: Female Thread

Code F12

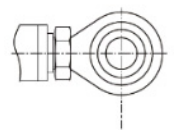
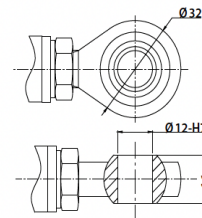
Definition of Installation Length:



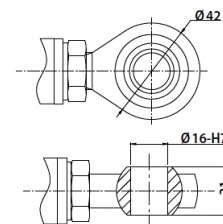
Type D: Joint Bearing

Code F13

Definition of Installation Length:



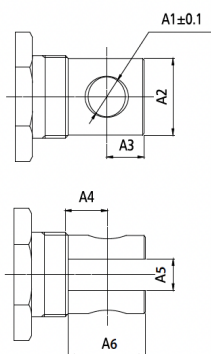
Code F14



• Mounting Connectors

2. Motor End Mounting

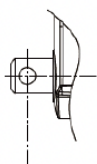
Type A: Thru Hole



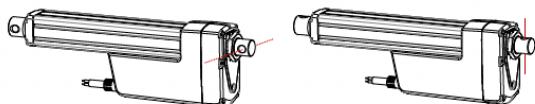
Code	A1	A2	A3	A4	A5	A6
R01	Ø12.2	Ø29	13	15	Without Slot	
R02	Ø13.2	Ø29	13	15		
R03	Ø14.2	Ø29	13	15		
R04	Ø12.2	Ø29	13	15	10	27
R05	Ø13.2	Ø29	13	15	10	27

[Table 8]

Definition of Installation Length:



Orientation

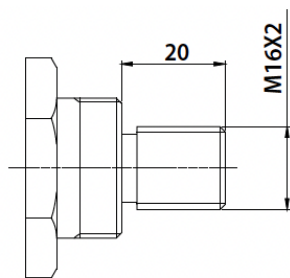


Code 1 : 90°

Code 2 : 0°

Type B: Male Thread

Code R06

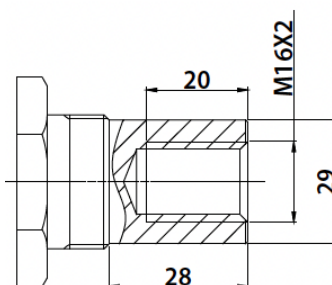


Definition of Installation Length:



Type C: Female Thread

Code R07



Definition of Installation Length:



Unit: mm

• Signal Feedback

0. Standard Limit Switches Without Signal Feedback

Standard MLA-35 comes with limit switches that automatically shut off motor at the end of travel path.

Wire Type		
	Black	Red
Extend	-	+
Retract	+	-

[Table 9]

1. & 2. 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.

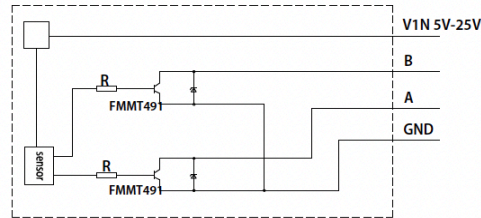
Code 1: NPN Signal

Code 2: PNP Signal

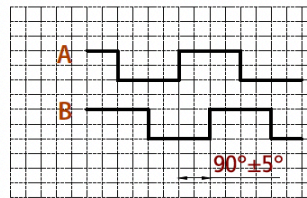
3. Hall Effect Sensor

Code	Pulse Equivalent per Sensor (pulse/mm)
A	9.8
B	7.3
C	4.7
D	4.9
E	3.6
F	9.1
G	6.1
H	4.5
I	2.9
J	1.9

[Table 10]



Wiring Diagram



Oscilloscope

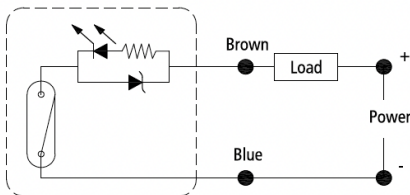
4. & 5. Analog Signal

Code 4: 0mA ~ 20mA

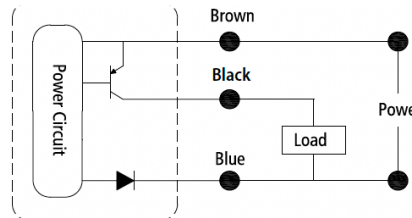
Code 5: 0V - 5V

6. 7. & 8. Magnetic Switches

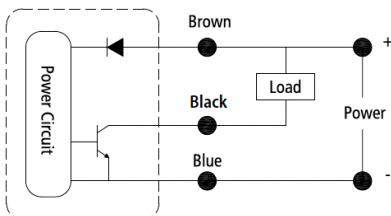
Code 6: Two-wire System



Code 7: Two-wire System (PNP)



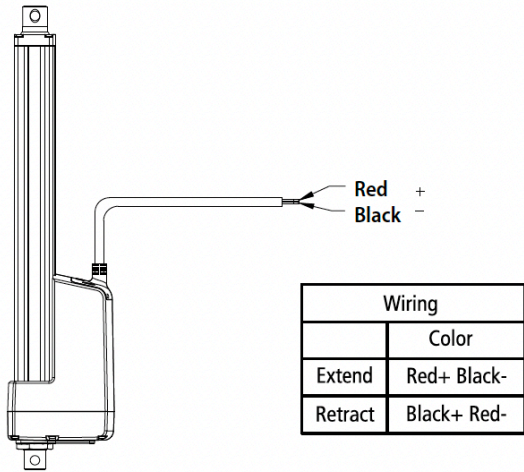
Code 8: Three-wire System (NPN)



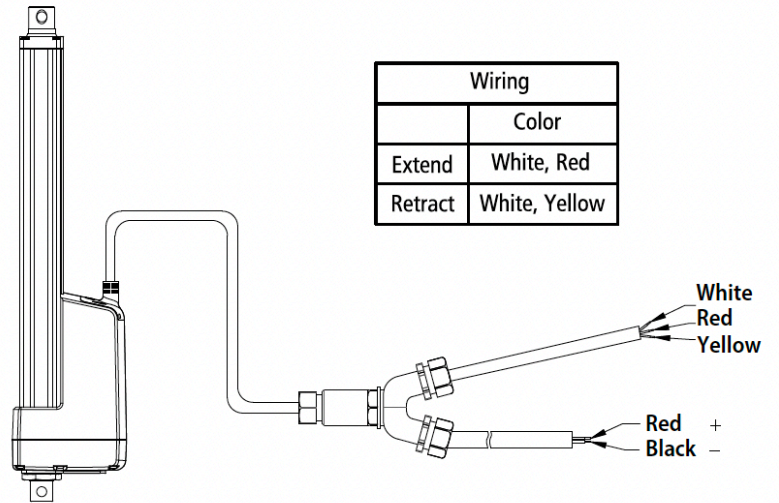
• Control Modes

0. Controller with Polarity Switching

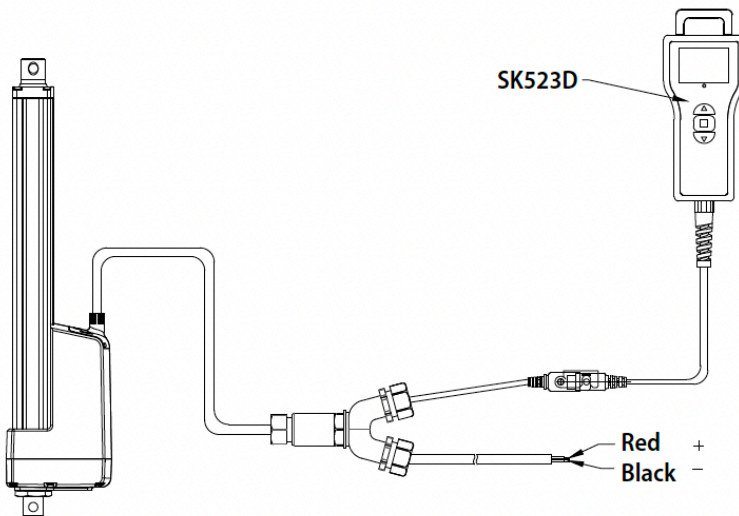
Needed to extend and retract actuator.



1. Logic Level Control



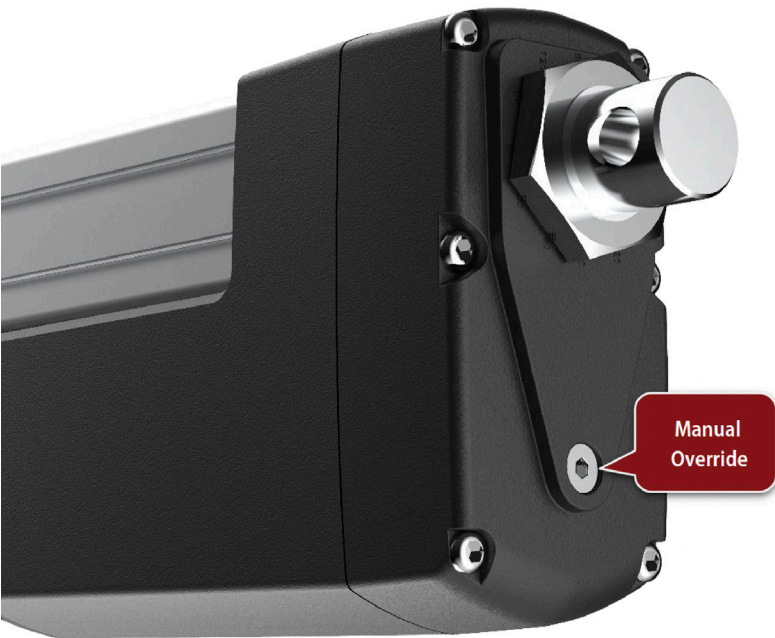
2. Go with SK523D Controller



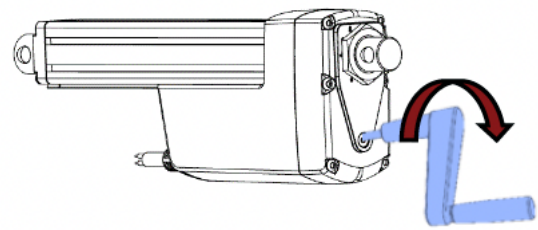
3. Synchronized Control

4. CANbus Control

• Emergency Manual Operation



This model includes a standard manual operation feature for use (with tool) in emergency situations with power outage.



• Cable Specifications

Excellent weatherproof capability
Simplified cable replacement

Code	Cable Length (mm)
1	600
2	1,000
3	1,500
4	2,000
X	Custom

[Table 11]

Code	Cable Connector
0	Tinned Bare Wire
1	Go with SK523D
X	Custom

[Table 12]



• Recommended Applications

The MLA-35 actuator features increased load capacity, higher efficiency and diverse control options. The MLA-35 is a versatile, reliable solution for a wide range of applications. Robust construction offers many advantages to traditional hydraulic systems and fuel efficient alternatives, with dependable performance even in challenging operating environments.

When selecting an actuator, it is important to consider your special operational conditions and any potential extreme use scenarios when making your selection. Taking these into consideration will help determine if actuator’s performance will meet your operational requirements.

• Operating Temperature

Code	Operating Temperature
1	-10°C to 65°C
2	-40°C to 65°C

- Estimated Work Cycles per Day
- Estimated Working Days per Year
- Expected Lifespan
- Details of Application



Construction Machinery



Agricultural Machinery



Mowers and Outdoor Equipment



Industrial Automation



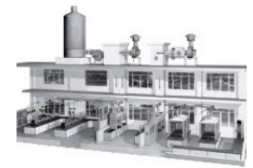
Medical Beds and Equipment



Vehicle Assistance Devices



Catering Automation



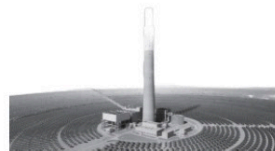
Commercial Farms and Ventilation



Massage Chairs



Solar and Wind Energy Equipment



CSP Power Plants



Intelligent Industrial Manufacturing

• 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 4-5]			
<input type="text"/>	Front Mounting End	F01 - F14		or FX = Custom	
<input type="text"/>	Rear Mounting End	R01 - R05		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	3 = Hall Sensor	4 = Analog 0-20mA
<input type="text"/>		5 = Analog 0-5V	6 = Two-wire Magnetic Switches	7 = Three-wire Magnetic Switches (PNP)	8 = Three-wire Magnetic Switches (NPN)
<input type="text"/>	Control Method	0 = None	1 = Logic Level	2 = Go with SK523D Control	3 = Synchronized Control
<input type="text"/>		4 - CANbus Control			
<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	1 = Go with KZ Control	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