

Linear Stepping Motor

Digital Linear Actuator (External Nut)

Description

Conversion of rotary to linear motion inside a linear actuator is accomplished through a threaded nut and lead screw. The external shaft is threaded. In order to generate linear motion the lead screw must rotate together with rotor, and the shaft threads engage the nut resulting in linear motion. Changing the direction of rotation combination determines the linear travel per step of the nut. The travel length and speed can be digital controlled by the input of data pulses. Moons DLA 16HY0416-02N, is designed as travel of 0.004mm per step and can be accurately controlled to drive 40mm movement by a 10K data pulses input. Application: Various zoom controls, X-Y stages, as well as other linear motion control applications.



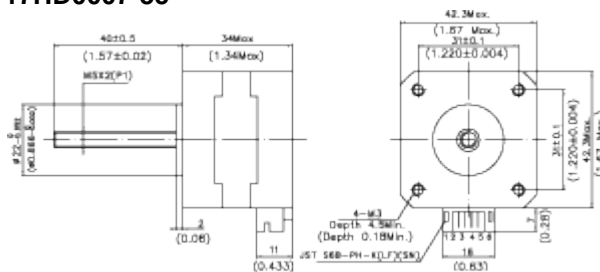
General Specifications

Model Number	Number of leads	Step Distance		Rated Current	Resistance per Phase	Inductance per Phase	Rotor Inertia		Motor Mass	
		mm	inch	A	ohm	mH	g.cm ²	oz-in ²	kg	lb.
17HD0007-35	4	0.01	0.0004	0.4	35	44	38	0.21	0.20	0.44
17HD2405-20N	4	0.015	0.0006	0.5	25	45	57	0.31	0.24	0.53
17HD4001-15N	4	0.04	0.0016	0.4	30	45	38	0.21	0.20	0.44

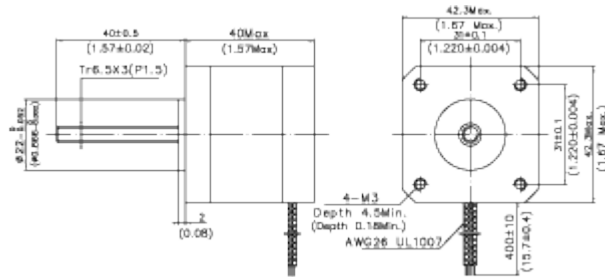
Wiring Diagram

Mechanical Dimension

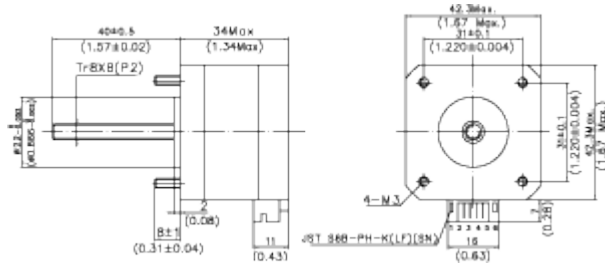
17HD0007-35



17HD2405-20N



17HD4001-15N



Digital Linear Actuator (Internal Nut)

Description

Conversion of rotary to linear motion inside a linear actuator is accomplished through a threaded nut and lead screw. The inside of the rotor is threaded and the shaft is replaced by a lead screw. In order to generate linear motion the lead screw must be prevented from rotation. As the rotor turns the internal threads engage the lead screw resulting in linear motion. Changing the direction of rotation reverses the direction of linear motion. The motor's rotary step angle. The thread pitch of the rotor nut and lead screw combination determine the linear travel per step of the motor. The travel length and speed can be digital controlled by the input of data pulses. Moons DLA 11 HS1002-04, is designed as travel of 0.0035mm per step and can be accurately controlled to drive 35mm movement by a 10K data pulses input. Accomplishing the conversion of rotary to linear motion inside the rotor greatly simplifies the process of delivering linear motion for many applications. Because the linear actuator is self-contained, the requirements for external components such as belts and pulleys are greatly reduced or eliminated. Fewer components make the design process easier, reduce overall system cost and size and improve product reliability. Application: Various valve intelligent controls, Telecommunication Tuning, as well as other linear motion control applications.



25L024L & 25L048L Digital Linear Actuators (Captive)

Type

- Diameter: Ø25mm
- Height: 27.5mm
- Step Angle: 15°, 7.5°



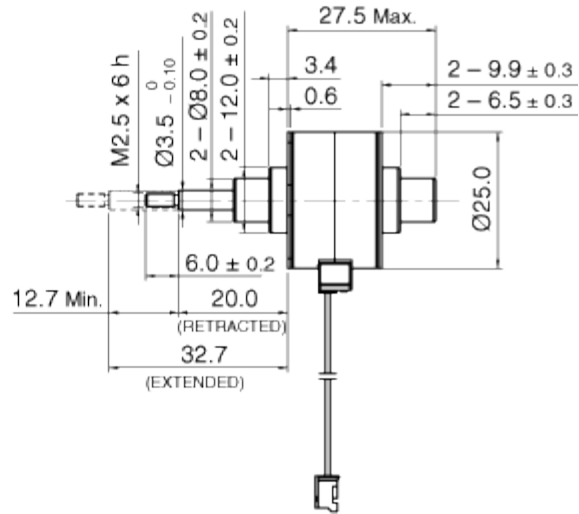
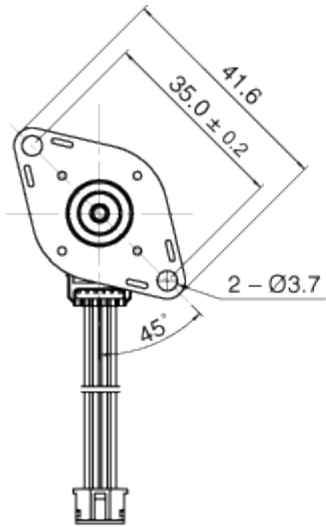
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
25L024L	Ø25	27.5	15°	3.5	45	cover
25L048L	Ø25	27.5	7.5°	3.5	45	cover

Typical Characteristics

Model		25L024L8	25L048L8
Step Angle		15°	7.5°
Rated Voltage		DC 12V	DC 12V
Rated Current		500mA constant	500mA constant
Resistance		8 ohm	8 ohm
Extantion Method	Bipolar	2-2 Phase	2-2 Phase
Holding Force		4.4 kg @0.125A	4.4 kg @0.125A
Pull / Push Force		3.5 kg @300pps	3.5 kg @300pps
Linear Travel / Step		0.0254 mm (0.001 inch)	0.0127 mm (0.0005 inch)
Shaft Stroke		12.7 mm	12.7 mm

Typical outline



25L024L & 25L048L Digital Linear Actuators (Non-Captive)

Type

- Diameter: Ø25mm
- Height: 17.3mm
- Step Angle: 15°, 7.5°



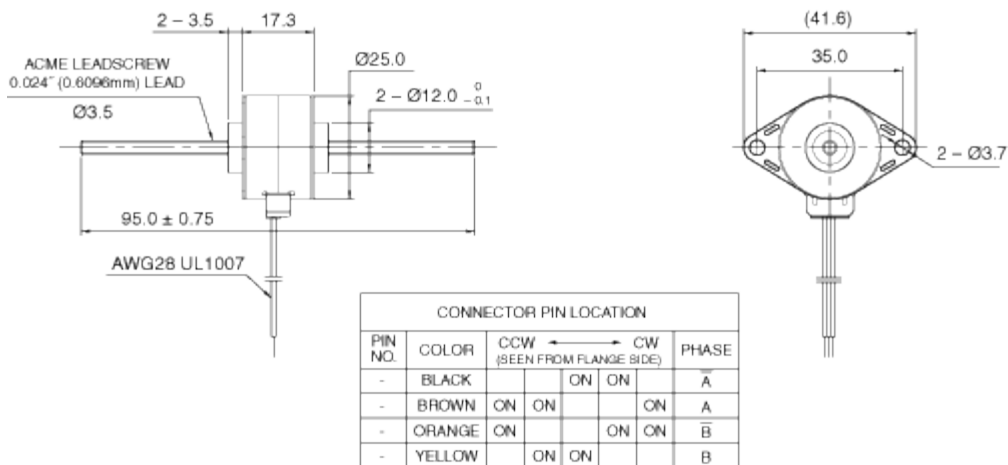
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
25L024L	Ø25	17.3	15°	3.5	45	cover
25L048L	Ø25	17.3	7.5°	3.5	45	cover

Typical Characteristics

Model		25L024L9	25L048L9
Step Angle		15°	7.5°
Rated Voltage		DC 12V	DC 12V
Rated Current		500mA constant	500mA constant
Resistance		8 ohm	8 ohm
Extation Methord	Bipolar	2-2 Phase	2-2 Phase
Holding Force		4.4 kg @0.125A	4.4 kg @0.125A
Pull / Push Force		3.5 kg @300pps	3.5 kg @300pps
Linear Travel / Step		0.0254 mm (0.001 inch)	0.0127 mm (0.0005 inch)
Shaft Stroke Length		95 mm	95 mm

Typcial outline



25L024L & 25L048L Digital Linear Actuators (External)

Type

- Diameter: Ø25mm
- Height: 17mm
- Step Angle: 15°, 7.5°



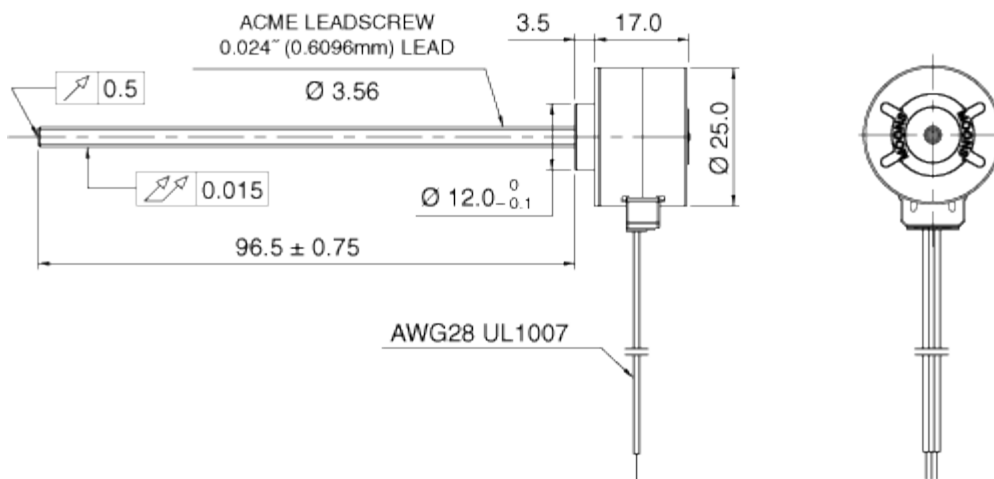
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
25L024L	Ø25	17.0	15°	3.56	45	cover
25L048L	Ø25	17.0	7.5°	3.56	45	cover

Typical Characteristics

Model		25L024L8	25L048L8
Step Angle		15°	7.5°
Rated Voltage		DC 12V	DC 12V
Rated Current		330mA constant	330mA constant
Resistance		14.7 ohm	14.7 ohm
Extation Methord		2-2 Phase	2-2 Phase
Holding Torque	Bipolar	200 g.cm	252 g.cm
Pull-out Torque		90 g.cm @ 700pps	120 g.cm @ 700pps
Pull-in Torque		90 g.cm @ 300pps	120 g.cm @ 300pps
Pull-in Pulse Rate		850pps	1000pps
Linear Travel / Step		0.0254 mm (0.001 inch)	0.0127 mm (0.0005 inch)
Shaft Stroke Length		95 mm	95 mm

Typical outline



35L024S & 35L048S Digital Linear Actuators (Captive)

Type

- Diameter: Ø35mm
- Height: 15.6mm
- Step Angle: 15°, 7.5°



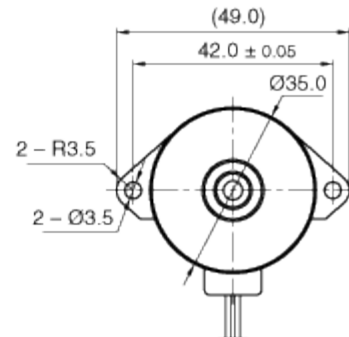
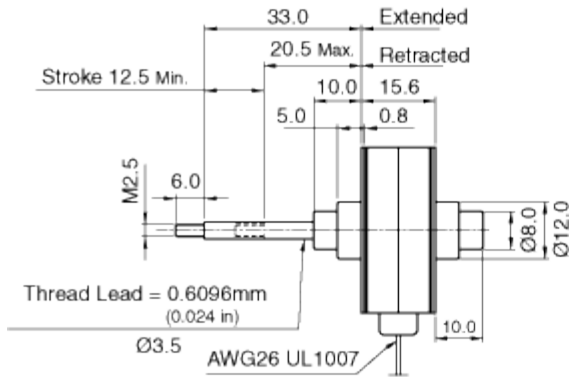
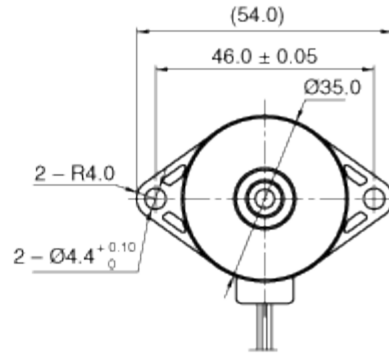
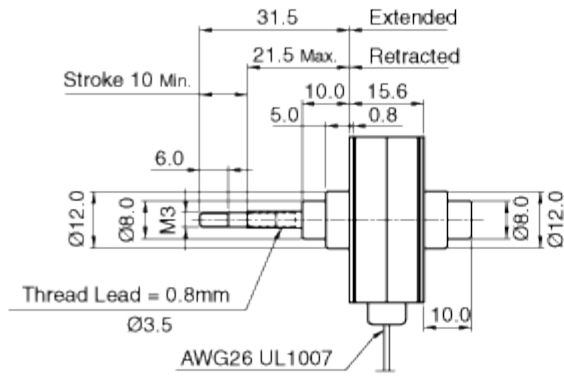
General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
35L024S	Ø35	15.6	15°	3.5	65	cover
35L048S	Ø35	15.6	7.5°	3.5	65	cover

Typical Characteristics

Model		35L024S	35L048S	35L024S	35L048S
Step Angle		15°	7.5°	15°	7.5°
Rated Voltage		DC 12V	DC 12V	DC 12V	DC 12V
Rated Current		500mA constant	500mA constant	500mA constant	500mA constant
Resistance		7.7 ohm	7.7 ohm	7.7 ohm	7.7 ohm
Extation Method	Bipolar	2-2 Phase	2-2 Phase	2-2 Phase	2-2 Phase
Holding Force		12 Kg @ 0.125A	12 Kg @ 0.125A	12 Kg @ 0.125A	12 Kg @ 0.125A
Pull / Push Force		9 Kg @ 300pps	11 Kg @ 300pps	9 Kg @ 300pps	11 Kg @ 300pps
Linear Travel / Step		0.033 mm (0.0013 inch)	0.0167 mm (0.00066 inch)	0.0254 mm (0.001 inch)	0.0127 mm (0.0005 inch)
Shaft Stroke Length		12.5 mm	12.5 mm	12.5 mm	12.5 mm

Typical outline



42L048L & 42L096L Digital Linear Actuators (Non-Captive)

Type

- Diameter: Ø42mm
- Height: 37.2mm
- Step Angle: 7.5°, 3.75°



General Specifications

Model Number	O.D.	Height	Step Angle	Shaft O.D.	Weight	Lead-Wire Outlet
	mm	mm	deg	mm	g	
42L048L	Ø42	37.2	7.5°	5.56	160	cover
42L096L	Ø42	37.2	3.75°	5.56	160	cover

Typical Characteristics

Model	Bipolar	42L048L8	42L096L9
Step Angle		7.5°	3.75°
Rated Voltage		DC 24V	DC 12V
Rated Current		800mA constant	100mA constant
Resistance		5 ohm	18 ohm
Extation Methord		2-2 Phase	2-2 Phase
Holding Force		12 Kg	1 Kg
Pull / Push Force		4.5 Kg @ 1000pps	1.4 Kg @ 800pps
Linear Travel / Step		0.0508 mm (0.002 inch)	0.0254 mm (0.001 inch)
Shaft Stroke Length		150 mm	150 mm

Typcial outline

