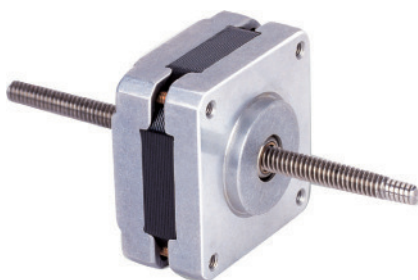# Digital Linear Actuator (Internal Nut)

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 motors rotary step angle. The thread pith 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 vell as other linear motion control applications.

General Specifications

Model Number	Number of leads	Step Distance		Current Phase	Resistance per Phase	Inductance per Phase	Rotor Inertia		Motor Mass	
		mm	inch	A	ohm	mH	g.cm^2	oz-in^2	kg	lb.
16HY7001-52	4	0.1270	0.0050	0.48	25	26	11	0.06	0.1	0.22
11HS1002-14	4	0.0035	0.0001	0.7	4.8	3.4	9	0.05	0.12	0.26

Mechanical Dimension
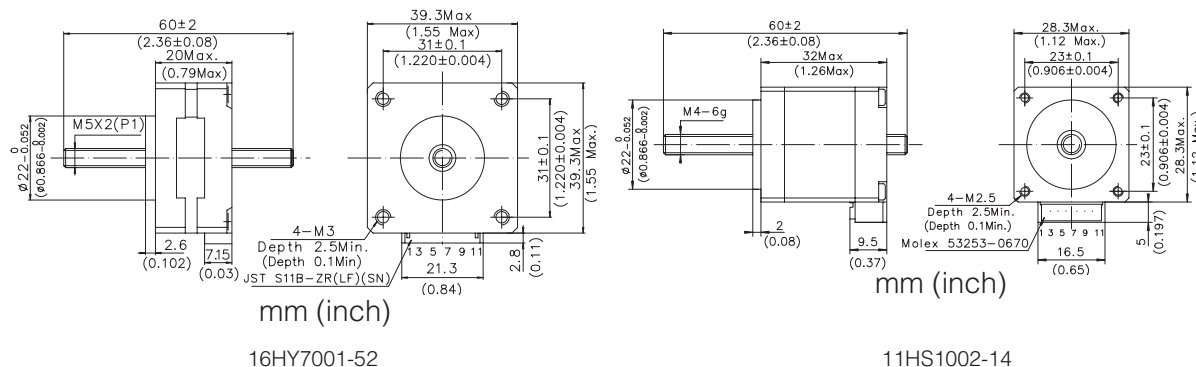
16HY7001-52

11HS1002-14

mm (inch)

Dynamic Torque Curves

24V constant current driver
16HY7001–52
0.48A
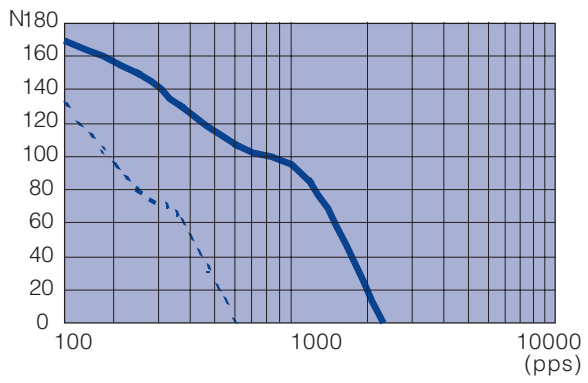
Speed Vs Thrust
11HS1002–14
0.7A/24V

0.9°

1.8°

3.6°

3.75°

1.2°
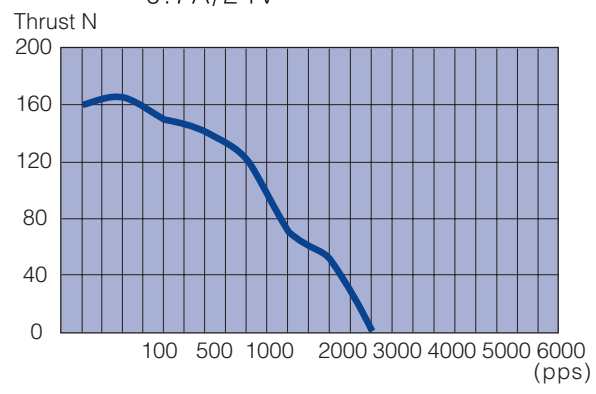
2-PHASE

3-PHASE

DIGITAL LINEAR ACTUATOR

INTERGRATED STEPPING MOTOR

MOTOR DRIVER

HB MOTOR