

DLSRA SERIES

Direct Drive Linear Rotary Actuator

DLSRA-25-25
DLSRA-25-50



PRODUCT FEATURES

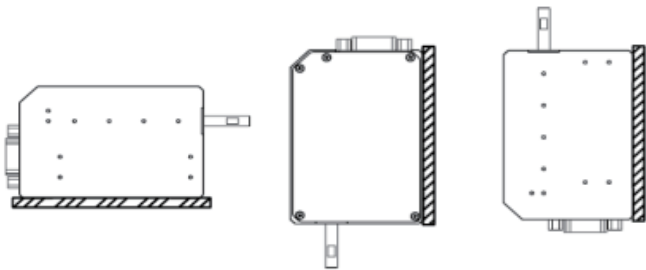
High Performance Linear/Rotary Motion Adjustable Parameters	Hollow Rod Soft Landing Power-off Protection	Precision Resolution Long Life over 100 Million Cycles
Provide accurate linear and rotary actions of the Z-axis during high-speed motion, with adjustable velocity, thrust, and position parameters, enabling complex actions requiring high frequency and high precision.	The product is compact, light, and thin. It employs a hollow rod design to support pick-and-place tasks. The intelligent soft landing function protects the picked and placed workpiece with precise force control. The Z-axis has a built-in spring to prevent the axis from falling off due to power-off during vertical operations.	Regarding this product, the stroke resolution is up to 0.5 μm , the rotary position resolution is 0.005°. With high-quality guide rail-level related components, it has a service life of up to 100 million cycles, and it is stable and durable.

INSTALLATION METHOD

Install it using the screw holes on the back of the product.

Installation directions:

- Horizontal direction
- Vertical installation with the vertical rod pointing down
- Vertical installation with the vertical rod pointing up



APPLICATION SCENARIOS



DLSRA features linear and rotary motion plus $\pm 0.1\text{ N}$ force repeatability, and can be applied in assembly and bonding of 3C products, automatic transplanting, handling, etc.

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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Note: For magnetic scale configuration, the accessory package (with I/O cable) is required.

Peak thrust	27.5N
Continuous thrust* ^①	10 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=8.35-0.056 \cdot L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	25 mm
Maximum speed	1 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 800 g: $\pm 5\%$
Force constant	8.3 N/Arms
Holding torque	0.03 N.M
Maximum speed	800 rpm
Linear encoder resolution	1 μ m (Magnetic encoder) 0.5 μ m (Optical encoder)
Linear positioning repeatability	± 5 μ m (Magnetic encoder) ± 2 μ m (Optical encoder)
Rotary encoder resolution	8000p/r
Rotary positioning repeatability	$\pm 0.1^\circ$ (Magnetic encoder)

Overall mass	1170 g
Movable part mass	280 g
Radial deviation of shaft	0.01 mm
Size	185 mm x 122 mm x 25 mm
Recommended air pressure range* ^④	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ^⑤
Pressure Drop	0-5 Kpa
Flow Rate	≥ 8 L/min

Operating voltage	24 V DC $\pm 10\%$
Continuous current	(Linear) 1.2 Arms (Rotary) 0.9 Arms
Peak current	(Linear) 3.3 Arms
Recommended load	< 100 g
Recommended load inertia	20 g.cm ²
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

Technical drawing of the SC-36P sensor assembly, showing three views: Top View, Front View, and Side View.

Top View:

- Overall dimensions: 195mm (width) x 122mm (height).
- Dimensions: 16mm, 3.30mm, 1mm, 15mm, 6mm, 7mm, 0.15mm, 18mm, 22mm, 28mm, 92mm.
- Callouts: 4x Ø4.50 thru ALL, H7 -0.01 0 thru ALL, 2x Ø3, M4 Depth 8, 2x M2.5 Depth 4, 9, 15, 18, 22, 28, 92.

Front View:

- Overall dimensions: 205mm (width) x 122mm (height).
- Dimensions: 10mm, 15mm, 185mm, 205mm.
- Callouts: 15, 18, 22, 28, 92.

Side View:

- Overall dimensions: 25mm (width) x 92mm (height).
- Dimensions: 77mm, 25mm, 92mm.
- Callouts: 9, 15, 18, 22, 28, 92.

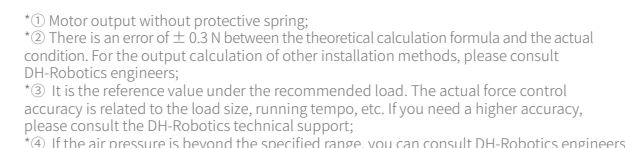
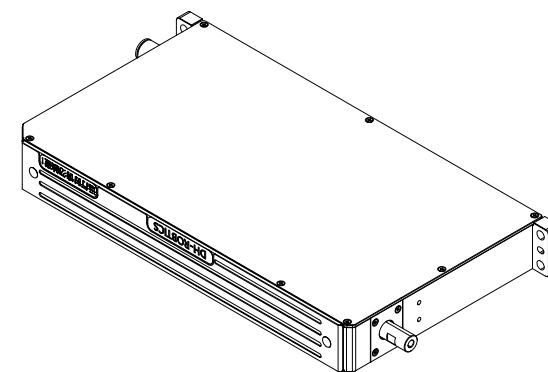
Callouts:

- 4x Ø4.50 thru ALL
- H7 -0.01 0 thru ALL
- 2x Ø3
- M4 Depth 8
- 2x M2.5 Depth 4
- 9
- 15
- 18
- 22
- 28
- 92
- 15 Rod Fully Ret
- 2x M3 thru ALL
- SCSI-36P
- Ø6 Insertion of the Windpipe

DIRECT DRIVE LINEAR ROTARY ACTUATOR

Voice Coil Series	Thickness (mm)	Stroke (mm)	Linear Encoder	Rotary Encoder	Voltage (V)	Interface Location/ Vacuum	Accessories Bag	Drive /Cable
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TECHNICAL SPECIFICATIONS



Peak thrust	27.5N
Continuous thrust* ^①	10 N
Calculation formula for linear shaft motor output (vertically down)* ^②	$F=9.25-0.056 \times L$ (For the actual output, refer to the thrust-displacement curve)
Total stroke	50 mm
Maximum speed	1.4 m/s
Force control accuracy* ^③	50 g ~ 200 g: ± 10 g 200 g ~ 800 g: $\pm 5\%$
Force constant	8.3 N/Arms
Holding torque	0.03 N.M
Maximum speed	800 rpm
Linear encoder resolution	1 μ m (Magnetic encoder) 0.5 μ m (Optical encoder)
Linear positioning repeatability	± 5 μ m (Magnetic encoder) ± 2 μ m (Optical encoder)
Rotary encoder resolution	8000p/r
Rotary positioning repeatability	$\pm 0.1^\circ$ (Magnetic encoder)

Overall mass	1290 g
Movable part mass	290 g
Radial deviation of shaft	0.015 mm
Size	210 mm x 122 mm x 25 mm
Recommended air pressure range* ⁽⁴⁾	-0.1 Mpa ~ +0.2 Mpa
Recommended Input Vacuum	≥ -90 Kpa* ⁽⁵⁾
Pressure Drop	0-5 Kpa
Flow Rate	≥ 8 L/min

Operating voltage	24 V DC $\pm$ 10%
Continuous current	(Linear) 1.2 Arms (Rotary) 0.9 Arms
Peak current	(Linear) 3.3 Arms
Recommended load	< 100 g
Recommended load inertia	20 g.cm ²
Maintenance interval	Refer to Maintenance Instructions for DH-Robotics Linear coil actuator
IP rating	IP 40
Recommended operating environment	0~40°C, 85% RH or less
International standard compliance	CE, FCC, RoHS

Dimensions

