

## Global Leader

NEA® Electronics, Inc. is a global leader in spacecraft mechanisms. Our low shock release devices are relied upon for spaceflight applications more than any other device.

## Reliable

Our designs are reliable, simple, insensitive to adverse environments and backed up by years of heritage and loyal customers.

## Quality Assured

NEA, a trusted supplier of mission critical components, is certified to ISO 9001:2008 and AS9100:2009 C

# NEA Model P3<sup>5</sup> Pointing Mechanism / Actuator

## Model P3<sup>5</sup> Pointing Mechanism Product Data Sheet

NEA's P3<sup>5</sup> Pointing Mechanism is designed to fit the mechanical interface requirements of a large number of existing and future applications while providing superior performance.

### Advantages

- Very fine step size option ~0.0024°
- Four Flexible Standard Configurations
- Integrated active thermal control

### Two Step Angle Options

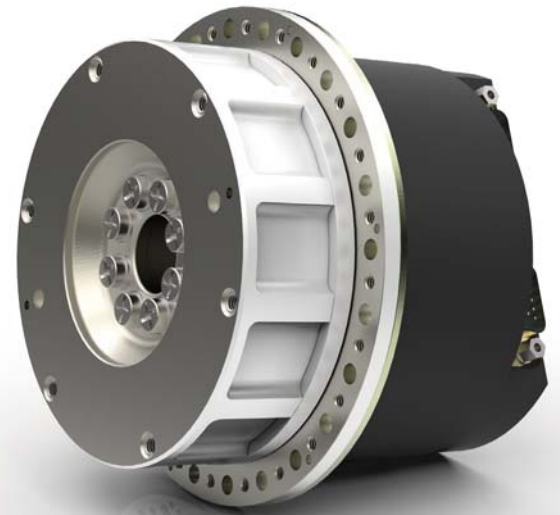
NEA pointing mechanisms are available with either a 0.0075° output step angle and or a ~0.0024° for very fine positioning and low torque disturbance without the need for microstepping. Eliminating the need for microstepping reduces power consumption.

### Four Configurations

The NEA P3<sup>5</sup> Actuator is available in four different configurations that support both normal and fine step angles as well as 3-phase and 4-phase winding configurations.

### Integrated Active Thermal Control

Integrated redundant heaters and thermistors located in close proximity to the input bearings conserve power and support extended temperature range operation.



## Design Features

Additional design features include:

- Single Axis and Gimbal Configurations
- Modular Telemetry Options
- Electrically Redundant
- Custom Adjustable Stops and Travel Ranges
- Multi-pass Labyrinth Seals at Dynamic Interfaces
- Optional Twist Capsules
- Optional Rotary Coaxial Joints
- Optional Stowed Cam Stops

# NEA Model P3<sup>5</sup> Pointing Mechanism / Actuator

## Model P3<sup>5</sup> Actuator Technical Specifications

Parameter	Units	P3 <sup>5</sup>	P3 <sup>5+</sup>	P3 <sup>5L</sup>	P3 <sup>5L+</sup>
Output Step Size	deg	0.0075	0.0024 <sup>1</sup>	0.0075	0.0024 <sup>1</sup>
Motor Phases		3	3	4	4
Nominal Voltage (V)	V	28	28	70	70
Resistance (nom)	Ω	61.5	61.5	323	323
Power (max) <sup>2</sup>	W	27.4	27.4	22.6	22.6
Torsional Stiffness (min)	N·m/rad In·lb/rad	28250 250,000	28250 250,000	28250 250,000	28250 250,000
Unpowered Holding Torque (min)	N·m In·lb	11.3 100	34 300	11.3 100	34 300
Powered Holding Torque (min)	N·m In·lb	56.5 500	147 1,300	56.5 500	147 1,300
Maximum Speed <sup>3</sup>	deg/sec	1.5	0.50	1.5	0.50
Non-operational Temperature Range	°C	-100 to 150	-100 to 150	-100 to 150	-100 to 150
Operational Temperature Range <sup>4</sup>	°C	-50 to 105	-50 to 105	-50 to 105	-50 to 105
Mass	kg lb	1.8 4.0	1.8 4.0	1.8 4.0	1.8 4.0

**Notes:**

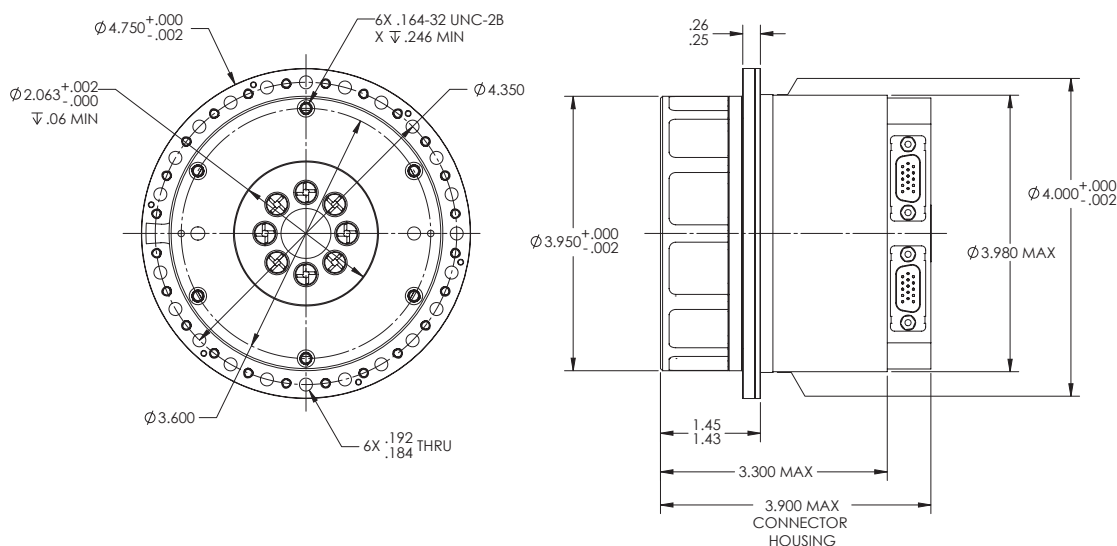
<sup>1</sup>Angle Approximate

<sup>2</sup>Dependent on duty cycle

<sup>3</sup>For no-load operation

<sup>4</sup>Operational temperature range is dependent on the load and inertia applied as torque margins change with temperature

## Series P3<sup>5</sup> Actuator Mechanical Interface Drawing



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NEA® Electronics, Inc. is dedicated to building mankind's legacy in space by supporting our customers in the aerospace industry through on time delivery of innovative products that exceed expectations and assure mission success.