




Sensata
Technologies

BEI KIMCO

MOTION CONTROL IN AEROSPACE APPLICATIONS

SENSATA BRUSHLESS DC MOTORS
AND VOICE COIL ACTUATORS



Whether designed into some of the Earth's most advanced aerospace platforms or travelling to Mars and beyond, Sensata | BEI Kimco manufactures custom brushless DC motors and voice coil actuators designed to deliver robust, high performance Rotary and Linear motion component solutions for a wide range of mission critical applications.

With decades of experience in collaborating with our customers at the design/inception stage in support of aerospace, military and privately funded programs, our team consistently delivers industry leading precision motion component solutions for the most demanding, highly specialized applications.

EXCEPTIONAL TORQUE/FORCE PERFORMANCE WITH THE SMALLEST FORM FACTOR

Our proprietary magnetics design software allows our team to deliver the highest torque densities in the market today, with customer-verified performance efficiencies in excess of 90%

ROBUST DESIGNS BUILT FOR CHALLENGING ENVIRONMENTAL CONDITIONS

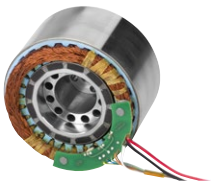
Our BLDC motors and VCAs are designed to survive extreme shock/vibrational loading, atmospheric pressures, extreme ambient operating temperatures, and exposure to vacuum environments.

PROCESSES LED BY ENGINEERS, NOT ACCOUNTANTS

The Sensata Kimco team has decades of experience collaborating with the world's leading aerospace corporations – resulting in a consultative process built on a large portfolio of baseline designs, patents, material options and features to support our customers' optimized performance goals.



CONFIGURATION AND CUSTOM-DESIGN OPTIONS



BRUSHLESS DC MOTORS



HOUSED BLDC MOTORS

Delivering a fully encapsulated system or customizable rotor/stator part sets for full system assembly integration

BRUSHLESS DC MOTORS

SINE AND TRAPEZOIDAL BEMF WINDING PROFILES: Both sine and trapezoidal based BEMF profile options are available to accommodate our customer's commutation and control schemes for optimum operating efficiencies.

MAGNETIC DESIGN OPTIMIZATION FOR VELOCITY AND POSITION BASED MOTION PROFILES: Custom lamination, winding, and magnetic pole options available to support high performance design solutions with cost effective upfront tooling investments.

FRAMELESS INNER & OUTER ROTATING MEMBER CONFIGURATIONS: Inner and outer rotating member design configurations are available to support the integration of the motor components within our customer's next higher assembly.

BEARING OPTIONS: A wide variety of high quality (ABEC 5 or better) open, shielded, and sealed bearing options are available. Each option can be complimented with custom grease selections and fill levels for improved longevity and resistance to external environmental factors.

ANTI-VIBRATION AND NOISE REDUCTION FEATURES: Various noise reduction and anti-vibration design techniques can be employed to achieve optimal acoustical noise performance. These include the use of proprietary magnetic circuit and mechanical component design methodologies.



CYLINDRICAL FRAMELESS, HOUSED OR SEMI-HOUSED



RECTANGULAR LINEAR VOICE COIL ACTUATORS



ROTARY VOICE COIL ACTUATORS

VOICE COIL ACTUATORS

SPLIT COIL DESIGNS: Voice coil actuators with split coil designs are made to increase the force of the VCA without having to increase its overall diameter. It also provides a lower inductance and electrical time constant, providing a higher force/weight ratio.

MATERIALS OPTIMIZED FOR LOW OUTGASSING: Proven materials and processes to meet low outgassing requirements for vacuum and other applications.

APERTURE/THROUGH-HOLE DESIGNS: Applications involving laser focusing may require a through-hole or aperture design, allowing the laser to pass through the VCA without interference.

MOVING MAGNET DESIGNS: Reversing the traditional design alignment, VCAs featuring a stationary coil and a moving magnet create advantages in some applications, such as increased heat dissipation and stationary lead wires.

BEARING OPTIONS: Our housed and semi-housed voice coil actuators use linear bearings/bushings to provide long life and low friction. Our variety of options include designs for axial loads, speeds, bio-compatibility, life requirements and more.

TILT AND SPHERICAL VCA CONFIGURATIONS: Tilt or spherical VCA designs in which four actuator coils are placed on a common frame and positioned to deliver the load in a variety of positions.



ABOUT US

Sensata Technologies is one of the world's leading suppliers of sensing, electrical protection, control and power management solutions with operations and business centers in twelve countries. Sensata's products improve safety, efficiency and comfort for millions of people every day in automotive, appliance, aircraft, industrial, military, heavy vehicle, heating, air-conditioning and ventilation, data, telecommunications, recreational vehicles and marine applications. For more information, please visit the Sensata website.

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