

Zero-Net Momentum Actuator (ZNMA)

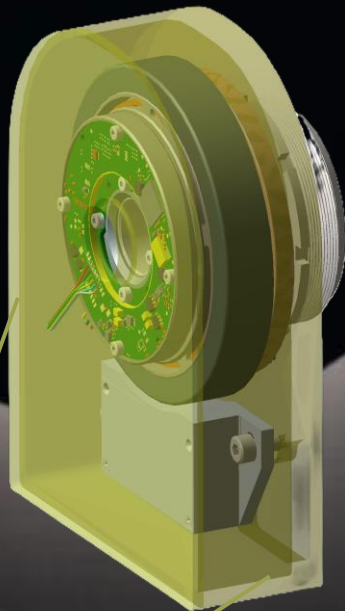


A ZNMA gimbal decouples the dynamic motion of a payload from the bus so that **no momentum is imparted onto the bus**.

This is middleware infrastructure that enables a satellite to operate independently from any moving payload, reducing integration and control complexity, and saving fuel and power.

Work with us to embed the technology within your payload or attach it between a payload and a satellite platform.

Supports: Antennas, Gimbals, LiDAR, Robotic Arms, Grippers, Laser Beam Drivers, Imagers, and other Deployable Space Systems.



Applications	Orbital Debris Tracking Communications Payload Maneuvering In-Orbit Refueling Satellite Repair In-Space Manufacturing Scanning
Holding Position	0.01°
Max Payload Rotation	±180° (Optionally N360° with slip ring)
Max Payload Speed	No Design Limit (Subject to Mission Requirements)
Max Payload Mass	No Design Limit (Subject to Mission Requirements)
ZNMA Mass	2-10% of Payload Mass (Subject to Mission Requirements)
Voltage	24-60V
Operational Temperature	-200 °C- 180 °C (Optional inclusion of heaters)
Lifetime	MTTF analysis of 10 years
Built-In Electronics	Optional HDRM(s) Optionally, control PCBs can be built-into system
Other Design Features	Hollow shaft design, slim, low SWaP-C,

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