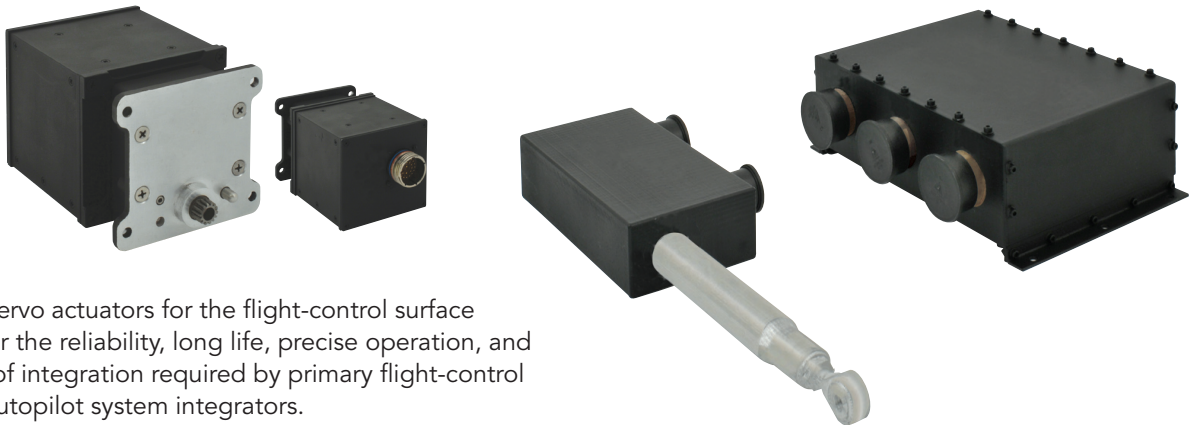


BVR™ Aerospace Actuators

Precise, high-reliability motion-control solutions featuring:

- Brushless DC motors
- High-efficiency servos
- Compact digital controls
- High-performance gears

High-reliability flight-control servo actuators with digital controllers for simple integration



BVR servo actuators for the flight-control surface deliver the reliability, long life, precise operation, and ease of integration required by primary flight-control and autopilot system integrators.

Esterline offers a range of state-of-the-art aircraft-control and pilot-interface solutions, from components to subsystems, so we understand the context in which our BVR actuators operate. We can help with flight-control design and integration, offering a world-class team-based workforce with decades of skill and experience in aerospace.

We deliver servos for either linear or rotary motion and position control, and we engineer all elements to optimize their integrated performance, including motors, reduction geartrains, lead screw and ram assemblies, position sensors, and control electronics.

BVR linear actuators include thrust and radially supported lead screws for exact axis control and efficient transmission. Precise machining and finishing ensure close tolerances for smooth, reliable screw operation through the entire travel, minimized ram backlash, and improved protection against contaminants.

An additional BVR advantage is a non-jamming ram mechanism, with proprietary energy-absorbing components at the travel limits.

BVR rotary actuators feature motors and gearboxes carefully matched for the specific application. Our speed-reduction gear assemblies are fine tuned for high torque-volume ratios, as well as long life and duty cycles, with hardened, precision gears up to AGMA Quality 12.

All BVR servos offer:

- High-reliability brushless DC motors
- Microprocessor-based controls, reducing size and weight, helping distribute processing away from central systems, and facilitating integration
- I/O capability for discrete serial or analog commands
- BIT coverage in excess of 95 percent
- Proprietary non-contact, digital position sensors for higher-performance servos: our efficient designs yield a 30 to 40-percent reduction in footprint, envelope, and weight, and a higher power-to-weight ratio
- High-power / high-torque capabilities
- Gears with tighter tolerances and better surface finish, due to our higher-performance gear-cutting processes

Whether you look at component details or system integration, the Esterline team behind BVR actuators delivers the solutions you need.

BVR flight-control surface actuators

Specifications

- Designed for more than 20 million cycles
- Low backdrive torques: 5 inch-ounces or less is possible
- Breakaway torque optimized for smooth startup
- Low mechanical backlash (10 arc minutes)
- High-performance servo: frequency response of 20 Hz is achievable
- MTBF > 40,000 flight hours
- Service life designed to > 80,000 flight hours over 20 years
- Actuators and controllers designed to meet safety requirements
- Failure rates less than 1×10^{-9} per flight hour

Auxiliary Components

- Slip clutches
- Dampers
- No-backs and overrunning clutches
- Friction brakes
- Toothed clutches and brakes
- Rotary position sensors, analog or digital
- Anti-backlash gears
- Specialized seals

For more information about BVR flight-control surface actuators, call us at 815-874-2471 or email bvr.sales@esterline.com.

Esterline
3358-60 Publishers Drive
Rockford, IL 61109
815-874-2471
www.esterline.com

Esterline
Control &
Communication Systems