



## ELECTRO-MECHANICAL ACTUATOR (EMA) FOR OPTIONALLY PILOTED VEHICLES (OPV)

# Enhancing flight in degraded environments

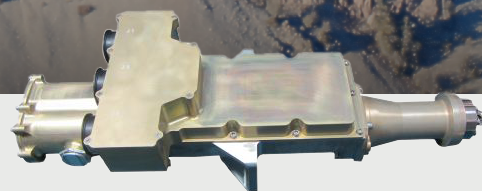
## Triple-redundant, “jam-free” technology

Collins Aerospace’s Electro-mechanical actuator (EMA) is one of the key components in a fly-by-wire retrofit kit that reduces pilot workload, enables optionally piloted vehicle (OPV) missions and leverages existing hydraulic actuators and cockpit controls.

Our EMA facilitates adding fly-by-wire capabilities to traditional mechanical aircraft. Fly-by-wire provides the precision control required for operating in degraded visual environments common to military and civil rotary-wing operations – such as brownouts, whiteouts, rain, smoke, fog, smog and night flights.

Our EMA design features include triple redundancy for reliable mission performance. It meets a stringent  $10^{-9}$  safety standard. The minimally invasive retrofit design makes it more cost-effective and easy to integrate.

Collins components make up the majority of a fly-by-wire retrofit kit, including the EMA, a vehicle management computer and a cockpit interface unit. Our innovations work seamlessly with OEM software technology packages.



## KEY FEATURES & BENEFITS

- Automatic force balancing ensures all redundancy lanes equally share the load.
- Automatic mode logic continuously monitors status and automatically selects proper mode of operation.
- Auto gain switching automatically selects proper loop gains based on current status and redundancy level.
- Fault monitors: 32 separate failure monitors ensure timely detection and mitigation of all failure modes.
- Fault logging and time totalizer on board for complete diagnostic and maintenance capability.
- Fully programmable OEM gains and limits facilitate OEM-specific requirements.

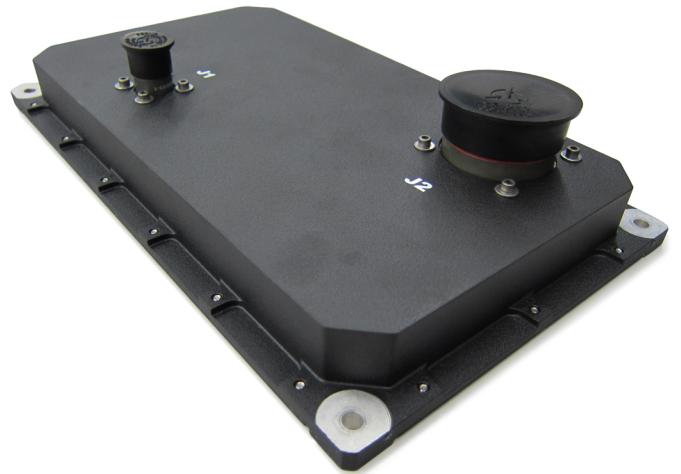


## COLLINS AEROSPACE – THE TRUSTED CHOICE

In the fast-evolving OPV arena, innovative thinking can introduce never-before-seen capabilities, but experience is what it takes to make a new idea work in the real world. Collins has more than 50 years of proven military, civil and commercial aviation experience. Today, we're applying innovation and experience to the next generation of flying by wire.

The Collins components that enable fly-by-wire and OPV solutions draw from our wide experience in stability control, full authority fly-by-wire solutions, data concentration, actuator controller, analog and discrete and digital bus technologies. For reliable performance in the harsh environments where military and civil rotary-wing aircraft operate every day.

Contact us to learn more about how Collins can provide the technology you need for your OPV missions.



*Cockpit interface unit*



*Vehicle management computer*



*Actuator control unit*

Specifications subject to change without notice.



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