

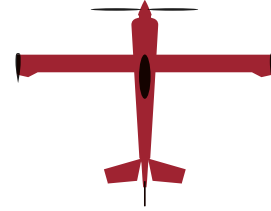
**GSE101-0000-06**

# LINEAR ACTUATOR



## APPLICATIONS

Developed for a civil aviation platform and integrated into wing structure to control spoiler flight control surface. Special feedback mechanism and sensor unit provides absolute positioning. Civil aviation certification process completed.



Manned Fixed Wing <25m Nose to Tail Training Aircraft  
Flight Control System

## STANDARDS

**MIL-STD-461F**  
**MIL-STD-810G**  
**RTCA DO-160E**

## KEY FEATURES

- > Rotary absolute positioning sensor
- > Anti-rotation system
- > Retractable under 300N

## Actuator Specifications

Nominal Voltage 28 V

Dimensions  $\varnothing$  50 x 254 mm

Rated Speed 90 mm/s

Rated Force 5,200 N

Rated Output Power 450 W

Mechanical Stroke 40 mm

Static Load Limit 5,500 N

Operating Temperature -55°C to +70°C

Weight 1.85 kg

Motor - Gearbox Mount Type Inline

Feedback Hall Sensor + Potentiometer

## Environmental Specification

Temperature / Altitude -55°C to 72°C Altitude: 35,000 ft

Temperature Variation Temperature Change Rate: -10°C/min

Humidity 10 Cycle Humidity Exposure. (1 cycle consist of; 2h 85%rH, 6h 95% rH and 16h 85% to 95% rH change.

Operational Shock 6g, 11 ms Saw Tooth shock profile, 3 axis

Vibration RTCA-DO160E Figure 8-3 Curve M (Sinusoidal standard vibration)

Explosion Proofness Non Ignition Test

Water Proofness Spray Proof Test

Sand and Dust RTCA-DO160E Sand and Dust, 3 axis

Fungus Resistance Fungus Growth (30°C 97%rH 28day)

Salt Spray 24h exposure, 24h drying, 24h exposure, 24h drying

Icing 25 Cycle Icing Exposure. Each cycle variates temperature (-20°C to 30°), pressure (ambient to 35000feeth altitude) and humidity (less than 85% to 95% rH )

Magnetic Effect 41,5 mm Compass Needle Effecting Distance

Induced Signal Susceptibility Magnetic fields induced into the equipment: 20 A rms at 400 Hz  
Magnetic fields induced into interconnecting cables:  $I \times L = 30A \cdot m$  at 400 Hz reducing to 0.8 A·m at 15 kHz  
Electric fields induced into interconnecting cables:  $V \times L = 1800 V \cdot m$  from 380 to 420 Hz  
Spikes induced into interconnecting cables: Figure 19-4 L=3.0 m

Lightning Induced Transient Susceptibility While equipment is operating single stroke, multiple strokes, multiple burst and pin injection tests are executed. (A3J33)

Emission of Radio Frequency Energy (RE102) RE102 = 2MHz to 18GHz

MIL-STD-461F

RF Susceptibility (Radiated) (RS103) RS103 = 2MHz to 18GHz

Electrostatic Discharge (ESD) Susceptibility (CS118) MIL-STD-461G 15kV air discharge.

Steady State Acceleration MIL-STD-810 Structural Test Level: Forward: 4 g, Aft: 4 g, Up: 10.5 g, Down: 5.5 g, Lateral (+/-)3.45 g  
Operational Test Level: Forward: 3 g, Aft: 3 g, Up: 7 g, Down: 3.5 g, Lateral (+/-)3 g