

## Key Customer Platforms

### Commercial Transport

- Boeing 707, 717, 737, 747, 757, 767, 777, 787, DC8, DC9, DC10, MD11, MD80
- Airbus A320 Series, A330, A340, A350, A380
- Comac C919

### Military

- Boeing F15, F18, C17, KC135, CH47, V22, AH64, B52, 707, 767 Tanker, P8A Poseidon
- Lockheed Martin F16, F22, F35, C130J, P3
- Airbus A330MRTT, A400M
- Embraer KC390

### Regional and Business Jets

- Embraer 120, 135, 145, 170/175, 190/195, Legacy 600, Phenom
- Cessna 172, 182, 208, 525, 550, 560, 650, 750
- Gulfstream G100, G200, G450, G550, G650
- Bombardier CRJ 100/200, CSeries

### Rotorcraft

- AgustaWestland EH101, 109, 129, 139, 149, 189
- Bell 206, 209, 407, 427, 429
- Sikorsky H60



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## Flow Control Actuation

### Dual Motor Actuators

#### Low Profile



- Redundant dual permanent magnet DC motors
- Position indication, electrical and visual
- 55 in-lb (6.2 Nm) rated load\*
- EMI/RFI filtering standard
- V-band mounting
- Endurance life of 100,000 cycles\*
- Single motor operation at rated load at 23.5 to 31.0 in-lb (2.7 to 3.5 Nm): 10 s max\*
- Two motor normal operation at rated load at 23.5 to 31.0 in-lb (2.7 to 3.5 Nm): 2 to 8 s\*

### Single Motor Actuators

#### Opto-Electronic



- Permanent magnet DC motor
- Patented optical switch indication for enhanced reliability
- 25 in-lb (2.8 Nm) rated load\*
- EMI/RFI filtering standard
- Patented output shaft electrical isolation
- Endurance life of 100,000 cycles at rated load\*
- FAR 25.981 and SFAR88 compliant
- Operating time 1.7 to 5.0 s (90° travel)
- Lightweight and low power consumption
- Manual override clutch standard

#### Brushless Motor High Torque



- Redundant dual brushless DC motors with resolver and gear system
- Potentiometer rotary position feedback (conductive plastic element)
- 75 in-lb (8.5 Nm) rated load\*
- Hall effect switches sense end of travel
- Modulating continuous operation
- Typical application: Environmental Control System

#### Upright Mechanical Switching



- Permanent magnet DC motor
- Electro-mechanical switch indication
- 25 in-lb (2.8 Nm) rated load\*
- EMI/RFI filtering available
- Lightweight and low power consumption
- Manual override clutch available
- Standard aluminum housing
- Optional stainless steel and composite materials

## Utility Actuation

### Linear Actuators

#### Standard Linear



- Permanent magnet DC motors
- Electro-mechanical switch indication
- Up to 2500 lbf (11121 N) static load\*
- Up to 700 lbf (3114 N) operating load\*
- EMI/RFI filtering available
- Force limiting capability
- Non-jamming mechanical stops
- Stroke: 1-7 in (25-178 mm)\*
- Speed: up to 1 in/s (25 mm/s)\*
- Non-backdriving mechanical design

### Rotary Actuators

#### Position Control High Torque



- Brushless DC motor
- Potentiometer rotary position feedback
- Speed controlled
- Up to 204 in-lb (23 Nm) max operating load\*
- EMI/RFI filtering standard
- Four-bolts mounting
- Dual output shafts for left/right side mounting
- Endurance life to 90,000 cycles\*
- Current draw limited
- Typical application: RAM Air Door

#### Compact Linear



- Permanent magnet DC motor
- Electro-mechanical switching indication
- Operational load capabilities up to 480 lbf (2135 N)\*
- Stroke: 1.30 in (33.0 mm)\*
- Current draw less than 3.0 amps at rated load\*
- +100,000 life cycles at a 287 lbf (1275 N)\*
- Linear speed of 0.35 in/s (8.9 mm/s)\*
- Non-backdriving mechanical design
- EMC/HIRF conformance to RTCA/DO-160F
- Typical application: Fan Air Inlet Door

#### Low Profile



- Permanent magnet DC motor with worm gear drive and spur gear set
- Position indication or manual override
- 0-35 in-lb (0-4.0 Nm) torque load\*
- EMI/RFI filtering available
- V-band mounting
- Modulating option available
- Endurance life of 100,000 cycles\*
- Operating time .5 to 1.0 s (90° travel)

## Power Seat Actuation

### SkyMotion™ Actuators

#### Thru Shaft Linear

- Speed options up to 3.0 in/s (76 mm/s)
- Nominal loads up to 500 lbf (2224 N)
- Maximum Loads up to 800 lbf (3559 N)
- Static loads greater than 4000 lbf (17793 N)



#### Rotary

- Speed options upto 48 RPM
- Nominal loads up to 178 in-lb (20.1 Nm)
- Maximum loads upto 220 in-lb (24.9 Nm)



### Legacy Actuators

#### Rotary



- Brushless DC Motor
- Precision control
- Nominal loads up to 178 in-lb (20.1 Nm)
- Maximum loads up to 220 in-lb (24.9 Nm)
- Shaft length customizable
- Manual override
- Speed options upto 48 RPM
- DO-160, Boeing & Airbus certification
- Endurance life of 100,000 cycles\*

#### Linear Extension Shaft



- Brushless DC motor
- Precision control
- Nominal loads 20 lbf (89.0 N)
- Maximum loads 30 lbf (133.4 N)
- Shaft length customizable
- Low noise
- Speed up to 3.0 in/s (76 mm/s)
- DO-160, Boeing & Airbus certification
- Low weight < 2 lbs (0.9 kg)
- Endurance life of 100,000 cycles\*

#### Master Control Unit



- Integrated power supply
- System diagnostics
- Obstacle avoidance and detection
- Interfaces for 12V and 28V, RS485, RS232, CANBus, Discrete I/O
- Customizable software functionality
- DO-178B compliance
- DO-160, Boeing & Airbus certification
- Endurance life of 100,000 cycles\*



#### Common Features

- Brushless DC motor
- Precision control
- Shaft length customizable
- Low noise
- Built-In electronic control
- Low force manual override
- DO-178B compliance
- DO-160, Boeing & Airbus certification
- Endurance life of 100,000 cycles\*