Rotary Servo Actuators

Moog Components Group has been designing and producing specialized high technology and utility electromechanical actuators for over 20 years. Total in-house design, engineering and manufacturing expertise for these products.

**Rotary Servo Actuators**

Rotary brush motor servo actuators utilize brush-type DC motors using both Alnico and rare earth magnets. These units have been designed with separate or imbedded analog or digital amplifiers, spur gearing and potentiometers as feedback devices. Typical applications include UAV, RPV, target drones and utility aircraft applications.

**Model 808**

The 808 Rotary Servo Actuator is used to position the control surfaces and utility functions of a reconnaissance unmanned air vehicle and is designed to operate under extreme environmental conditions.

- **Size:** 1.1 x 2.7 x 4.0 inches
- **Power:** 28 VDC
- **Peak torque:** 100 in-lbs max
- **Lightweight**
- **Robust structural design**
- **High efficiency steel gearing**
- **Mechanical stops**
- **Environmental seal**
- **Embedded controller**
- **Internal mechanical slip clutch to prevent gear damage when impacting the stops**
- **Hybrid output stage**
- **Internal torque limiting**
- **Surface mount implementation**
- **RS-422/RS-485 command options**
- **±10 VDC analog command**
- **R/C command option**
- **3 gear ratios available**
- **No load speed:** 150-510 deg/sec depending on gear ratio
- **Rated load and speed:** consult factory for motor and gear ratios
- **Stroke:** ±51.5° and others available

**Model 813**

The Model 813 Rotary Brushless Actuator is an antenna azimuth drive servo actuator used for airborne radar applications including scan and sector modes.

- **Size:** 4.33 diameter x 7.76 inches long from back of brake to front of mounting flange
- **Power:** 28 VDC
- **Rated Power Point:** 320 in-lbs @ 25 rpm
- **Weight:** 12.5 lbs
- **Rare earth brushless DC resolver commutated motor**
- **Fail-safe electromagnetic brake with manual disengage**
- **Robust structural design**
- **Low endplay**
- **Hybrid output stage**
- **Harmonic Drive™ gearbox**
- **Front flange mount**
- **Stroke:** continuous rotation
- **No-load speed:** 45 rpm
- **Low temperature operation to -94°F**
- **Low endplay**
- **Robust structural design**
- **Mechanical stops**
- **Lightweight**
- **Peak torque:** 150 in-lbs*
- **Brushless DC motor**
- **Electronic position and torque limiting**
- **Film position transducer**
- **Position output signal**
- **Power point:**
  - 819 - 4.4 deg/sec @70 in-lbs
  - 820 - 160 deg/sec @80 in-lbs
- **Weight:** 1.2 lbs
- **No-load speed:** 819 - 6.0 deg/sec @80 in-lbs
- **Bandwidth to 10 Hz**
- **Robust structural design**
- **Non-jamming mechanical stops**
- **Sealed to withstand submersion to 10 feet of water**
- **Size:** 1.60 x 4.51 x 5.00 inches from front of mounting flange to rear of housing
- **Power:** 28 VDC
- **Rated Power Point:** 80 in-lbs @ 125 deg/sec
- **Weight:** 2.8 lbs
- **Stall torque:** 300 in-lbs
- **NFeB brushless DC motor with Hall sensor commutation**
- **±10 VDC or ±15 VDC command signal input**
- **Electronic position and torque limiting**
- **Position output command**
- **Current output signal option**
- **Film position transducer**
- **Robust structural design**
- **Low endplay**

**Model 817**

The Model 817 Rotary Servo Actuator is used to position the control surfaces of a target drone or unmanned air vehicle and is designed to meet the extreme operating and environmental conditions including submersion in water.

- **Size:** 1.60 x 4.51 x 5.00 inches from front of mounting flange to rear of housing
- **Power:** 28 VDC
- **Rated Power Point:** 80 in-lbs @ 125 deg/sec
- **Weight:** 2.8 lbs
- **Stall torque:** 300 in-lbs
- **NFeB brushless DC motor with Hall sensor commutation**
- **±10 VDC or ±15 VDC command signal input**
- **Electronic position and torque limiting**
- **Position output command**
- **Current output signal option**
- **Film position transducer**
- **Robust structural design**
- **Low endplay**

**Model 819 and 820**

The 819 and 820 Rotary Servo Actuators are used to position the throttle and control surfaces of a Remotely Piloted Vehicle (RPV). These actuators are designed to operate under extreme environmental conditions.

- **Size:** 1.5 x 3.2 x 4.5 inches
- **Power:** 28 VDC
- **Power point:**
  - 819 - 6.0 deg/sec @70 in-lbs
  - 820 - 160 deg/sec @80 in-lbs
- **Weight:** 1.2 lbs
- **Peak torque:** 150 in-lbs*
- **Brushless DC motor**
- **Electronic position and torque limiting**
- **Film position transducer**
- **Position output signal**
- **RS-422/RS-485 command options**
- **±10 VDC input command signal**
- **R/C command option**
- **Low backlash**
- **Robust structural design**
- **Mechanical stops**
- **High efficiency steel gearing**
- **No load speed:**
  - 819 - 6.0 deg/sec
  - 820 - 190 deg/sec
- **Bandwidth to 10 Hz**
- **Robust structural design**
- **Non-jamming mechanical stops**
- **Sealed to withstand submersion to 10 feet of water**
- **Size:** 2.3 x 4.75 x 5.0 Inches
- **Power:** 28 VDC and ±15 VDC