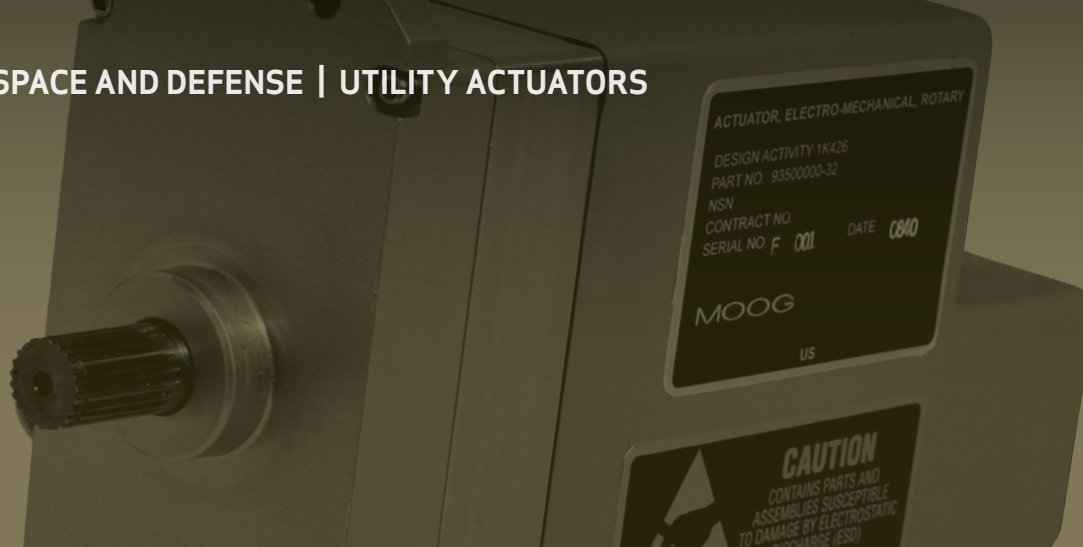




MODEL 935 ROTARY SERVO ACTUATOR



The Model 935 is one of the highest performance rotary servo actuators available on the market. We offer this actuator with a digital and analog communications interface. Also, we can customize the actuator to provide up to ± 90 degree angular excursion in a slightly longer package. These options allow our customers flexibility based upon the architecture in the system to have a drop-in servo actuator.

TYPICAL APPLICATIONS

- Unmanned air vehicles — tactical, medium long endurance and MALE / HALE vehicles
 - Control surfaces requiring servo actuation
- Target drones — control surfaces, speed brakes
- Utility actuation — throttle control, doors, spoilers
- Electric aircraft, eVTOL, eSTOL, air taxis and urban air mobility vehicles — tilting mechanism, flight control, landing gear



MODEL 935 ROTARY SERVO ACTUATOR

FEATURES

- Integrated position servo loop control with either analog or digital communications
- Non-jamming mechanical stops
- 4 stage spur gear train assembly
- Stainless steel output shaft, 0.5 inch SAE spline
- Brushless permanent magnet motor design
- High temperature capability
- Electronic stops limit input command
- NTC thermistor in motor for temp sensing of motor windings
- Outputs for current, velocity and temperature telemetry
- Signal interface is digital RS-485 electrical protocol
- Thermal management options available for high altitude application

BENEFITS

- Robust structural design
- Mechanical stops
- Low weight to power performance
- Customizable

DESIGN AND CONSTRUCTION

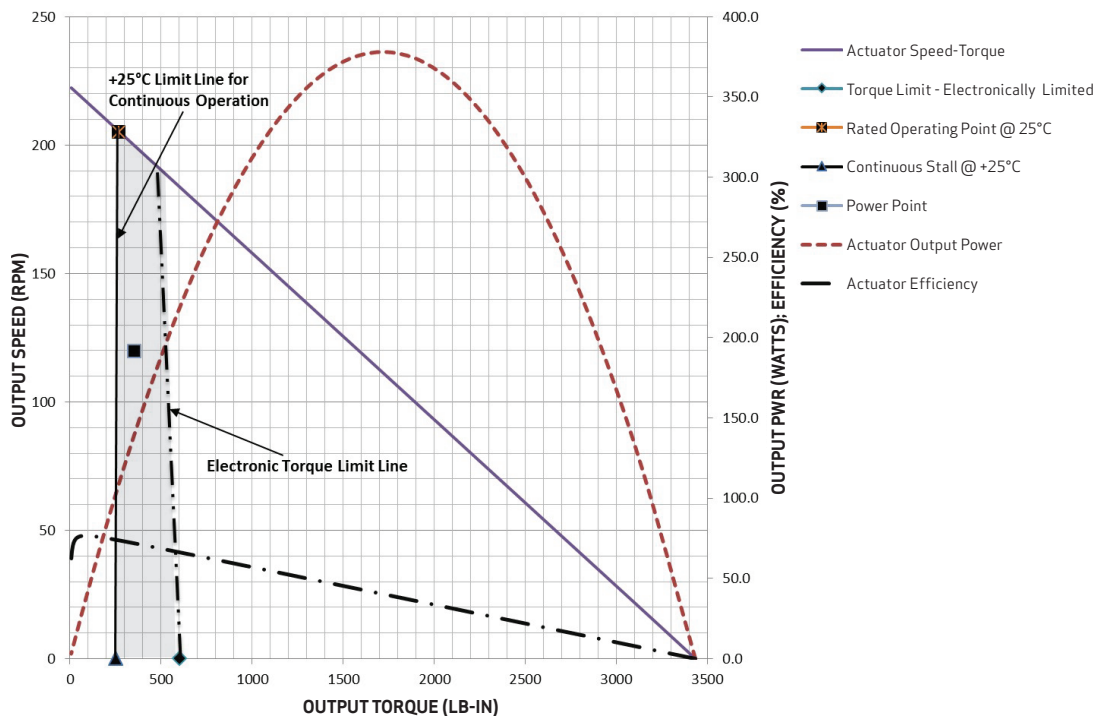
- IPC-6012, Class 3
- J-STD-001B, Class 3
- IPC-A-610, Class 3

ENVIRONMENTAL SPECIFICATIONS

MIL-STD-461F Test

Description	Details
Temperature/ Altitude	-40° to +60° C 0 to 65,000 feet
Explosive Atmosphere	Sea level - ambient H2 4% to 75% volume
Random Vibration	Table 5.3
Static Load	600 in-lb to each stop
25% Life Cycle	125 hours
Conducted Susceptibility	Method CS-114 Curve 5
Radiated Susceptibility	Method RS-103 200 V / m

CALCULATED PERFORMANCE CURVES @ 28 VDC AND @ 25°C



MODEL 935 ROTARY SERVO ACTUATOR

PERFORMANCE DATA SPECIFICATIONS

Features	Model 93500000-34	Model 93500000-36
Operating Voltage	21 to 32 VDC	21 to 32 VDC
Operating Temperature Range	-40° to +71° C	-40° to +71° C
Operating Altitude Range	-1,500 to +65,000 ft	-1,500 to +65,000 ft
Weight	3.9 lbm max	3.7 lbm max
Mechanical Stroke	±50°	±50°
Electrical Stroke	±45° - electronically limited	±45° - electronically limited
No Load Speed @ 28 VDC	180° / sec nominal - electronically limited	90° / sec nominal - electronically limited
Static Current @ 28 VDC	200 mA nominal	< 150 mA
Peak Stall Torque	600 in-lbf nominal - electronically limited	600 in-lbf nominal - electronically limited
Continuous Stall Torque	150 in-lbf	150 in-lbf
Line Current At Peak Stall Torque	6 amps nominal - electronically limited	< 6.4 amps
Unpowered Backdrive Torque	15 in-lbf max	15 in-lbf max
Power Point	350 in-lbf @ 120° / sec	280 in-lbf @ 60° / sec
Electromechanical Stiffness	100 in-lbf / degree, nominal	485 in-lbf / degree, nominal
Maximum Shaft Inertia	81 lb-in ²	520 lb-in ²
Backlash	< = 36 arc min ¹	< = 36 arc min ¹
Small Signal Frequency Response	5.0 Hz - at no load	5.0 Hz - at no load
Electrical Command Interface	4 wire RS-485 – full duplex ²	R/C PWM ³
Communication Protocol	See note 2	N/A
Command and Position Resolution	12 bits ²	N/A
Addressing	Connector pin strapping – up to 16 addresses ²	N/A
Loss of Communication	Float after 500 milliseconds	Return to null after 500 milliseconds

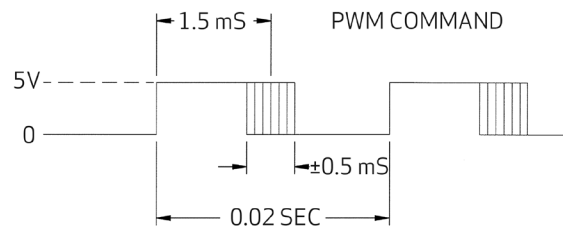
Notes:

¹With ±10 in-lbf reversing load applied to shaft.

²Contact Moog sales to receive detailed protocol information.

³Refer to Figure 1 for the PWM Command for Model 93500000-36.

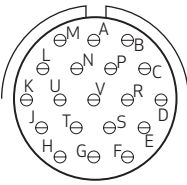
FIGURE 1



AS VIEWED FROM SHAFT
 INPUT COMMAND:
 • 2.0 mSEC = 45°CCW
 • 1.5 mSEC = 0°
 • 1.0 mSEC = 45°CW
 POSITION TELEMETRY:
 • -10 VDC = 45°CCW
 • +10 VDC = 45°CW

MODEL 935 ROTARY SERVO ACTUATOR

CONNECTOR PIN ASSIGNMENT

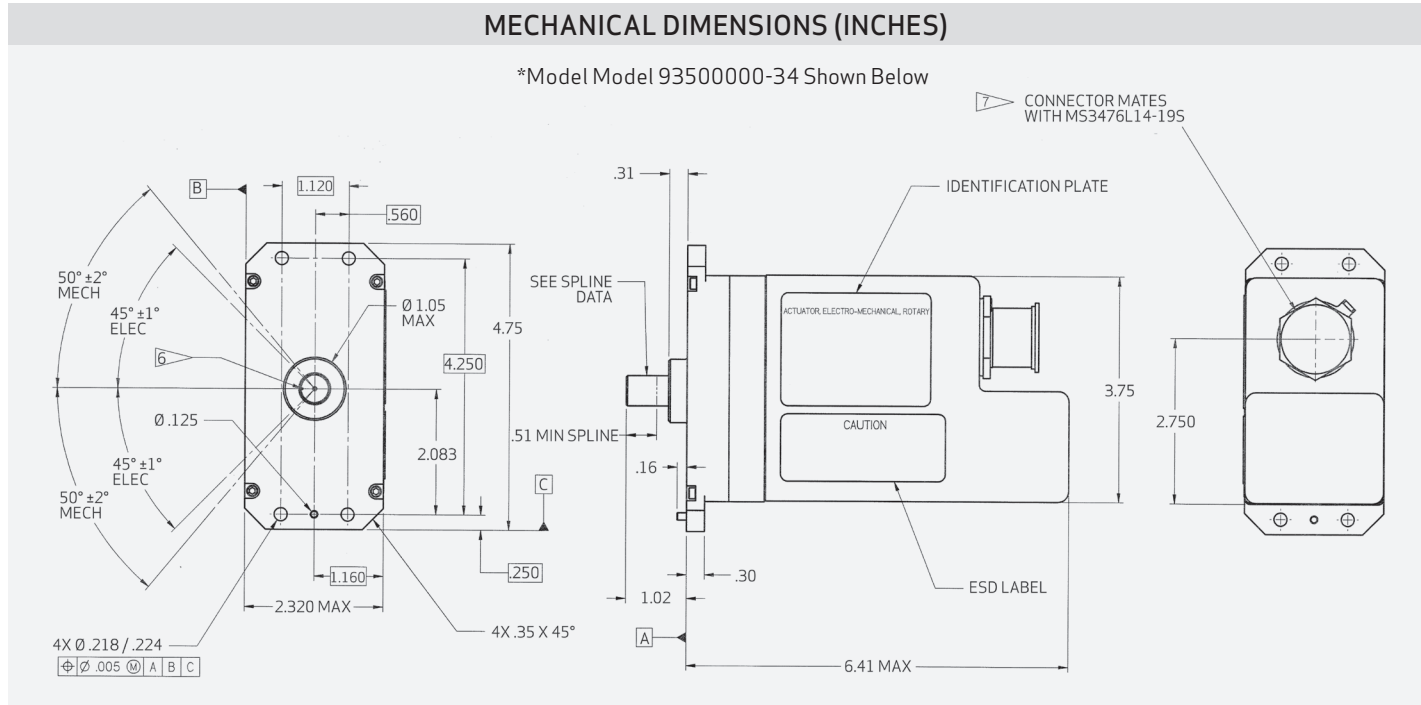
Pin	RS-485 Version Model 93500000-34	R / C PWM Version Model 93500000-36	*Pin Diagram
A	Power Gnd	Power Gnd	
B	Power Gnd	Power Gnd	
C	+ 28 VDC	+ 28 VDC	
D	+ 28 VDC	+ 28 VDC	
E	Current telemetry	Current telemetry	
F	Velocity telemetry	Velocity telemetry	
G	Signal RTN	Signal RTN	
H	Transmit high	Position telemetry	
J	Transmit low	Reserved	
K	Receive high	RC PWM In	
L	Receive low	RC PWM Rtn	
M	Temperature telemetry	Temperature telemetry	
N	Unit ID "A"	Reserved	
P	Unit ID "B"	Reserved	
R	Temp return	Temp return	
S	Chassis Gnd	Chassis Gnd	
T	Unit ID "C"	Reserved	
U	Unit ID "D"	Reserved	
V	Unit ID Rtn	Reserved	

*For reference only, Amphenol® catalog pin arrangement.

INVOLUTE SPLINE DATA

External Involute - Class 5 Fit
Fillet Root, Side Fit Per ANSI B92.1a-1976

Features	Model Model 93500000-34	Model Model 93500000-36
Number of Teeth	23	23
Pitch	48 / 96	48 / 96
Pitch Diameter	0.4792	0.4792
Pressure Angle	45	45
Base Diameter	0.3388 ref	0.3388 ref
Major Diameter	0.499 +0 -.002	0.499 +0 -.002
Minor Diameter	0.451 min	0.451 min
True Involute Form Diameter	0.465	0.465
Effective Circular Tooth Thickness Maximum	0.0369	0.0369
Actual Circular Tooth Thickness Minimum	0.0343	0.0343
Fillet Radius	0	0.0043
Measurement Over 0.0400 Diameter Pins	0.5428 min ref	0.5428 min ref



*Model 93500000-36 is similar to Model 93500000-34 in dimensions.

MOOG | Shaping the way our world moves™

poweranddata@moog.com
www.moog.com



Moog Space and Defense



Moog Inc.



@Moog_Inc



@Moog.Inc

Equipment described herein falls under the jurisdiction of the ITAR and requires US Government. Authorization for export purposes. Diversion contrary to US law is prohibited.

© 2026 a Moog company. All rights reserved.
Specifications and information are subject to change without prior notice.
Product and company names listed are trademarks or trade names of their respective companies.

Form 500-1296 052126