



Contrimax : True Aviation

High Reliability and Long Endurance Capabilities for eVTOL Air Taxi, Cargo Drone & Unmanned System

About Contrimax

Contrimax Co. Ltd.(www.contrimax.com) has already delivered small to large torque 14 ~ 500kgf·cm rotary/integrated servos to many flying platforms including eVTOL for variable applications such as controlling control surfaces, tilt rotor structure and main gear steering which are all complied with MIL-STD-810x, MIL-STD-461x and/or DO-160x for reliable and durable operations. All these expertise are to be integrated to upcoming **Micro ServoMax** to support multi-purpose, small, unmanned, fleet applications to accomplish specific set of missions with required reliability.



Characteristics

- Compact Dimensions & Low Weight
- High torque & Performance
- DSP-based digital electronics
- Hardened steel gear train
- Brushless DC motor & Contactless position sensor
- Temperature compensation
- Jitter minimizing & accurate position control

Applications

- Control surface actuation
- Steering control
- Brake control
- Engine throttle actuation
- Swash plate actuation
- Tilt rotor actuation
- Pitch control actuation



R&D Center Smart EMA Integration, Performance/Endurance test



Factory Precision gear hobbing, mechanical parts machining, control parts assembling and test



ServoMax[®] Series : Smart Electromechanical Actuator

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Product Guide

ServoMax Series utilize BLDC or PMS motors using both neodymium and rare earth magnets. These units have been designed with embedded digital control electronics, precise spur gearing and non-contactless position sensor as feedback devices. Typical applications include small drone, UAV and UAM's eVTOL aircraft applications.



Characteristics	ServoMax12	ServoMax20	ServoMax25	ServoMax50	ServoMax100	ServoMax150	ServoMax300	ServoMax500
Rated Torque	2.6kgf·cm (0.25Nm)	10kgf·cm (0.98Nm)	30kgf·cm (2.9Nm)	50kgf·cm (4.9Nm)	81.6kgf·cm (8Nm)	132.6kgf·cm (13Nm)	255kgf·cm (25Nm)	500kgf·cm (49Nm)
Max. Operating Torque	5.2kgf·cm (0.51Nm)	14kgf·cm (1.37Nm)	50kgf·cm (4.9Nm)	80kgf·cm (7.8Nm)	130kgf·cm (12.8Nm)	204kgf·cm (20Nm)	470kgf·cm (46Nm)	800kgf·cm (78Nm)
Rated Speed	215°/sec @ 7.4Vdc	100°/sec @ 14.8Vdc	150°/sec @ 28Vdc	150°/sec @ 28Vdc	140°/sec @ 28Vdc	160°/sec @ 28Vdc	140°/sec @ 28Vdc	90°/sec @ 28Vdc
No Load Speed	430°/sec @ 7.4Vdc	280°/sec @ 14.8Vdc	240°/sec @ 28Vdc	200°/sec @ 28Vdc	170°/sec @ 28Vdc	170°/sec @ 28Vdc	170°/sec @ 28Vdc	120°/sec @ 28Vdc
Operating Voltage	4.8 ~ 8.4Vdc	12~18Vdc	18~32Vdc, 12~18Vdc (Optional)	18~32Vdc, 12~18Vdc (Optional)	18~31Vdc	18~31Vdc	18~31Vdc	22~32Vdc
Rated Current	0.7A	0.6A (Peak Current 0.8A)	0.6A (Peak Current 1.0A)	1.0A (Peak Current 1.6A)	1.48A	2.5A	5A	9.0A (Peak Current 18A)
Angular Backlash	≤0.5~0.9°	≤0.3°	≤0.3°	≤0.3°	≤0.3°	≤0.3°	≤0.3°	≤0.3°
Accuracy	≤1°	≤0.5° (Including Backlash)	≤0.5° (Including Backlash)	≤0.5° (Including Backlash)	≤0.5° (Including Backlash)	≤0.5° (Including Backlash)	≤0.5° (Including Backlash)	≤0.5° (Including Backlash)
Bandwidth	16Hz@2°	7 Hz@2° *Sine wave	8 Hz@2° *Sine wave	6 Hz@2° *Sine wave	5 Hz@2° *Sine wave	5 Hz@2° *Sine wave	5 Hz@2° *Sine wave	5 Hz@2° *Sine wave
Max, Travel Angle	±170°	±170° (Mechanical Stop-Optional)	±170° (Mechanical Stop-Optional)	±170° (Mechanical Stop-Optional)	±170° (Multi turn optional)	±170° (Multi turn optional)	±170° (Multi turn optional)	±170° (Mechanical Stop-Optional)
Connector	JST Connector	D-Sub or Circular (Optional)	Circular or D-Sub (Optional)	Circular	Circular	Circular	Circular	Circular
MIL-STD-461	Selected	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	DO-160
MIL-STD-810	Selected	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	DO-160
Operating Temperature	-40°C~71°C	-40°C~71°C	-40°C~71°C	-40°C~71°C	-40°C~71°C	-40°C~71°C	-40°C~71°C	-40°C~71°C
Interface	CAN & PWM	CAN, PWM & Analog feedback (Optional)	Dual CAN, PWM & Analog feedback (Optional)	Dual CAN	CAN2.0A 2ch	CAN2.0A 2ch	CAN2.0A 2ch	Dual CAN, PWM & Analog feedback (Optional)
MTBF	-	2,000hr @ 50% Rated Torque(rms)	2,000hr @ 50% Rated Torque(rms)	2,000hr @ 50% Rated Torque(rms)	2,000hr @ 50% Rated Torque(rms)	2,000hr @ 50% Rated Torque(rms)	2,000hr @ 50% Rated Torque(rms)	5,000hr @ 50% Rated Torque(rms)
Dimension (W x H x L, m³)	40 x 12 x 40	62 x 20 x 73.5	70 x 25 x 110.3	82.5 x 30 x 110.6	93.6 x 37 x 121.9	96 x 40.2 x 133.5	117.3 x 52 x 157.5	135 x 56 x 133.7
Weight	38g	138g	286g	420g	615g	885g	1.39kg	1.87Kg