

APA-2707

Auto Pilot Actuator

The APA-2707 is a high quality, reliable platform, which includes servo-MSA-2411 actuator and an electromechanical clutch. It is optimized for UAV requirements such as: Temperature range; EMI RFI Shielding and high reliability.

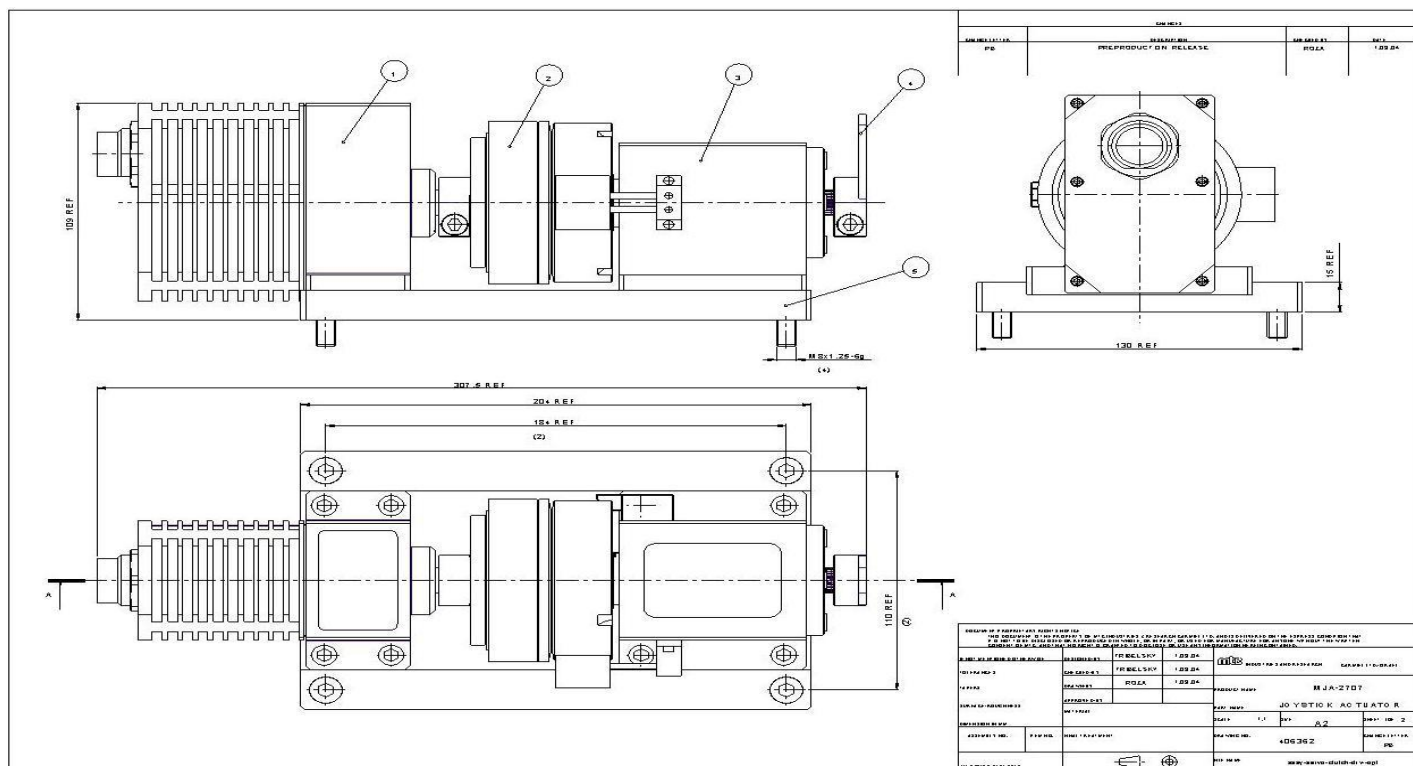
The MSA-2411 is a 28 VDC based actuator with brushless DC motor, high efficiency gear-box and electronic control system. Additionally, the clutch device can be apart from the platform permanently. It is characterized by high torque and light weight and conforms to MIL-STD 461E, MIL-STD 704E and MIL-STD 454H.

Specifications

Parameter	Value
Mechanical stroke (min) cw & ccw	50°± 0.5°
Electrical stroke cw & ccw	46°± 1°
Output linearity	1%
Operating voltage	18 to 32 (VDC)
Torque peak (at stall)	26 (Nm)
Load Spectrum	at 10 Nm, 95°/sec min
No load speed (min)	165 (deg/sec)
Mechanical backlash (max)	0.3°± 0.1°
Temperature, operating	-40° to + 71° (C)
Non-operating temperature	-54° to +85° (C)
Dimensions	See drawing below
Weight (max)	5.2 (Kg)

APA-2707 (continued)

Drawing



Electro Magnetic Clutch

The stationary field tooth clutch is part of the APA-2707 (See DRW POS 3).

Specification information provided for the Ortlinghaus clutch:

- Nominal voltage 24 [VDC]
- Nominal torque 40 [Nm]
- Nominal power consumption 26 [Watt]
- Dimension 81 x 51[mm]

APA-2707 (continued)

19 PIN connector assignments

The MSA-2411 Servo Actuator (see DRW Pos.1) has an input output 19 pin connector interface, as shown in the table below, with RS422/485 half-duplex communication link. The MSA-2411 receives position command and transmits position feedback and status, it has differential floating command and motor current consumption indicator pin. The servo waits 250 msec for command before it gets into floating mode. The analog position feedback span is 0 to +5 V.

Pin #	Function	Pin #	Function	Pin #	Function	Pin #	Function
A	PWR GND	G	Analog GND	N	RESERVED	V	FLOAT(-)
B	+28VDC	H	RS-485/422 (+)	P	RESERVED		
C	+28VDC	J	RS-485/422 (-)	R	POSITION OUT		
D	PWR GND	K	RESERVED	S	CHASIS GND		
E	RESERVED	L	RESERVED	T	RESERVED		
F	RESERVED	M	CURRENT SIGNAL OUT	U	FLOAT (+)		