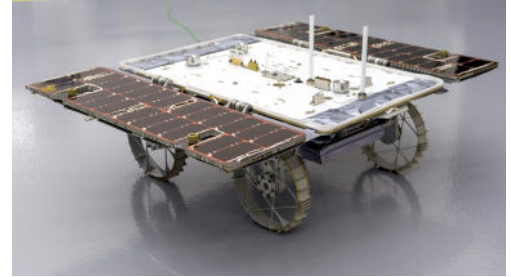


Compact Multi-Axis BLDC & Stepper Controller

Uniquely designed and qualified to support JPL's CADRE Lunar Rover mission, the FOXTROT controller integrates Motiv's product heritage of high performance motion control for space applications with a small, lightweight package for multi-axis control needs. The FOXTROT architecture is designed to operate in multiple configurations including both closed and open loop while supporting up to 8 motor interfaces.

Consistent with Motiv's flight heritage, the architecture and firmware of the FOXTROT is modernized for new-space applications yet maintains the reliability expected of traditional aerospace. The current amplifiers within this design utilize cycle-by-cycle current limiting to guarantee accurate current regulation. All Motiv motor control platforms utilize extensive fault protection features including motor winding faults, temperature monitoring, and radiation effects. The FOXTROT multi-axis controller has been designed to be adaptable to meet the needs of complex instrument payloads and rover platforms.

For requests or questions send to: info@motivss.com



Lunar CADRE Rover



FOXTROT Controller

PERFORMANCE	VALUES
Input Voltage Range	10.5-16.8 V
Motor Continuous Current	3.5 Arms
Motor Peak Current	5A, 2 seconds
Quiescent Power	<3W
Commutation Sensing	Hall Effect Sensor
Sensing	<ul style="list-style-type: none"> Motor current (4 BLDC) Open Loop (an additional 4 BLDC)
Motor Speed Support	500-5,000 RPM (typical)
Communication Bus Options	Standard: RS-422/485
Control Modes	Brushless/Servo: <ul style="list-style-type: none"> Position Velocity Current Torque Stepper: <ul style="list-style-type: none"> Full Step (1k PPS, max)
Applications	<ul style="list-style-type: none"> Wheel Drives Array Deployment Instrument Release Mech Instrument Alignment and Pointing AZ/EL Positioning

ENVIRONMENTAL	VALUES
Operating Temperature	-40C° to +90C°
Non-Operating Temperature	-55C° to +125C°
Random/Sine Vibration	11.6 grms
Radiation Tolerance TID	30 kRad
SEU LET Threshold	>60 MeV-cm2/mg
Orbit/Mission Support	Lunar / Leo
EMI/EMC Filter (optional)	MIL-STD-461
PHYSICAL	VALUES
Dimensions (packaged)	2.5" x 5.3" x 0.6" 6.4cm x 13.5cm x 1.5cm
Mass/Weight	90.2 g (no packaging)
Available EEE Classes	Space Plastic / Optional Screening for Level 3
Available Hardware Models	EDU/EM/FM

EXPORT RESTRICTIONS

Export of Motiv Motor Controllers is controlled under Export Control Classification Number (ECCN) 9A515.x and is available for sales in the countries listed in Group A:5.

