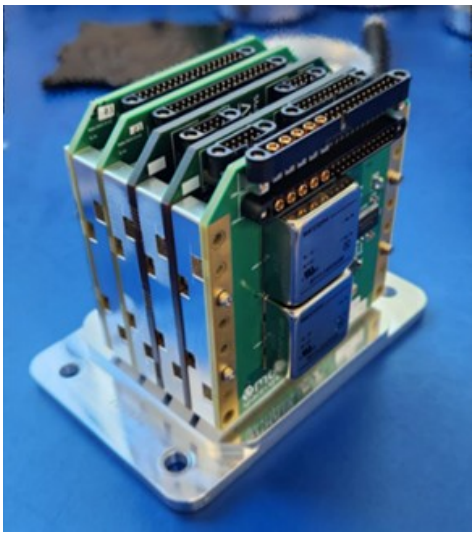
DELTA Stack Motor Controller

150W Rad Hard Multi-Axis Stepper & BLDC Controller

Motiv's DELTA Controller line is its most flexible and configurable product option. The DELTA Stack architecture allows support of complex pointing applications or unique mechanism profiling moves with multi-axis requirements. Tailored to interface with a wide variety of sensor options, the DELTA Stack well suits an evolving new space landscape focusing on future imaging, gimbal or ISAM related capabilities.

The DELTA Stack also boasts wide support for different mission pedigree needs from COTS/New Space to high reliability 15 year GEO missions. The DELTA architecture derives its flexibility with modular construction and FPGA resources made available to tailor control functions which reduce burden on host computer operations. All Motiv motor control platforms utilize extensive fault protection features including motor winding faults, temperature monitoring, and radiation effects. Customization of non-standard interfaces or modes are possible upon request to support broad applicability.

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



DELTA Stack Controller Model

PERFORMANCE	VALUES
Input Voltage Range	28V (16-32V) [Survival: 36V]
Motor Continuous Current	5A rms / axis
Motor Peak Current (10 sec)	10A rms
Quiescent Power	<4W
Commutation Sensing	Hall Effect Sensor, Resolver, Encoder
Sensing	• Potentiometer • Temperature • Limit Switches • Resolver • Strain Gauge
Motor Speed Support	0-10,000 RPM (typical)
Communication Bus Options	Standard: RS-422/485 Option: 1553, Spacewire, Ethernet, CAN
Control Modes	Brushless / Servo: • Field Oriented Control • Position • Velocity • Torque • Brake Control • Thermal/Heater Control Stepper: • Microstepping • Full Step (1k PPS, max)
Applications	• Filter Wheels • Reaction Wheels • Array Deployment • Instrument Alignment and Pointing • Coordinated Robotics • Antenna Positioning • Precision Mechanisms • Gimbals

ENVIRONMENTAL	VALUES
Operating Temperature Non-Operating Temperature	-55C° to +70C° -55C° to +125C°
Random/Sine Vibration	GEVS Standard
Radiation Tolerance TID SEU LET Threshold	New Space/Commercial >30 kRad (>43 MeV-cm2/mg) option >100 kRad (>75 MeV-cm2/mg) option
Orbit/Mission Support	LEO, GEO, MEO, Lunar, Deep Space
EMI/EMC Filter (option)	MIL-STD-461
PHYSICAL	**VALUES**
Dimensions (unpackaged*)	Single Axis 3" x 3" x 1.5" (7.6cm x 7.6cm x 3.8cm) Dual Axis 3" x 3" x 2" (7.6cm x 7.6cm x 5.1cm) Three Axis 3" x 3" x 2.5" (7.6cm x 7.6cm x 6.4cm) Four Axis 3" x 3" x 3" (7.6cm x 7.6cm x 7.6cm)
Mass/Weight	1.1-1.8 lbs 0.5-0.8 Kg
Available EEE Classes	Level 2/3/COTS per EEE-INST-002
Available Hardware Models	EDU/EM/FM

*Standard and Custom packaging options available.

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.