RECONFIGURABLE ACTUATION CONTROL UNIT FAMILY (RACU)

Moog's line of actuation control solutions are designed to be used in multiple aerospace and harsh environments. The commercial actuation controllers fall into our Reconfigurable Actuation Control Unit (RACU) product family. This family is capable of covering a wide range of performance characteristics with varying design parameters. This new product line is derived and based on existing and qualified Moog heritage solutions that is specifically focused on lower cost, faster lead times, and a reconfigurable nature. The modularity and available of the controllers lends itself to both rapid design iteration and solution evolution.
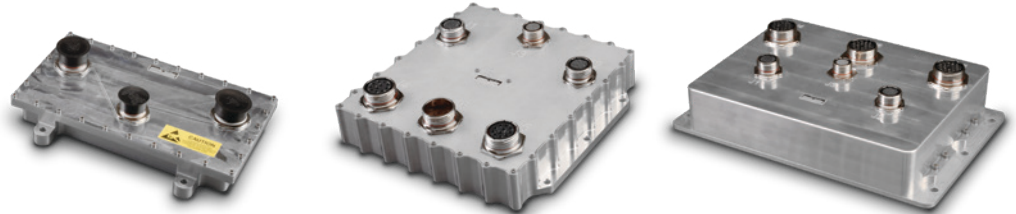
KEY FEATURES

• Six Step and Field Oriented Control capable
• User configurable gains and filters allows for adjustment of system behavior in application
• Configurable directly from MATLAB
• Qualified for launch vehicle environments
• Proven flight heritage

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PERFORMANCE SPECIFICATIONS

Features	Low Power RACU	Medium Power RACU	High Power RACU
Processing Element	FPGA w/ onboard memory for reliable high speed loop closure	FPGA w/ onboard memory for reliable high speed loop closure	FPGA w/ onboard memory for reliable high speed loop closure
Motor control type	3-phase brushless DC	3-phase brushless DC	3-phase brushless DC
Motor control axes	2	2	2
Input Power	28 VDC	28 VDC	28 VDC
Motor Bus Power	N/A (derived from 28 V input)	Up to 375 VDC	Up to 450 VDC
Peak Motor Phase Current	35 ADC	120 ADC	400 ADC
Integral Regenerative Energy Dissipation	Yes	No (regen should be dissipated external to controller)	No (regen should be dissipated external to controller)
Input Command	RS-422 or Analog	RS-422 or Analog	RS-422 or Analog
Motor Commutation Feedback Sensors	Sensorless, HEDs, Resolver, Rotary Encoder	Sensorless, HEDs, Resolver, Rotary Encoder	Sensorless, HEDs, Resolver, Rotary Encoder
Output Sensors	Motor counting, RVDT/LVDT, Linear /Rotary Encoder	Motor counting, RVDT/LVDT, Linear /Rotary Encoder	Motor counting, RVDT/LVDT, Linear /Rotary Encoder
User Programmable Gains	Yes (Moog support also available)	Yes (Moog support also available)	Yes (Moog support also available)
Aerospace environments	Yes	Yes	Contact Factory
Qualified Temperature	-40C to +71C	-40C to +71C	-40C to +71C
EEE Part Grade	Class III (Enhanced plastic / automotive or otherwise upscreened plastic parts)	Class III (Enhanced plastic / automotive or otherwise upscreened plastic parts)	Class III (Enhanced plastic / automotive or otherwise upscreened plastic parts)
Dimension	9.5 in x 6 in x 1.3 in	10.25 in x 10.5 in x 2.1 in	15 in x 10 in x 2.75 in
Weight	2.6 lb	9.2 lb	15.5 lb

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