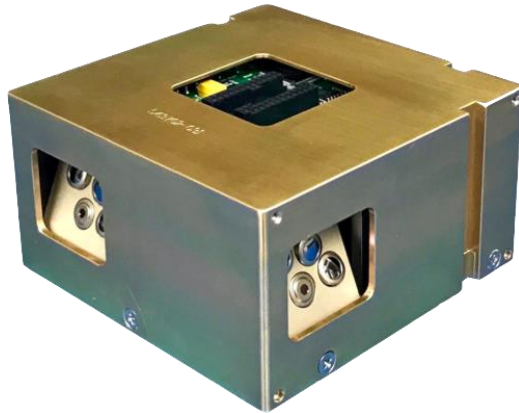


MAI-400

1/2U CubeSat ADACS



The 1/2U (10cm x 10cm x 5.16cm) Attitude Determination and Control System features three reaction wheels, a 3-axis magnetometer, two IR Earth Horizon Sensor (IREHS), three electromagnets and an ADACS computer for a stand-alone, Plug-and-Play attitude control system for small satellites. The configuration is compatible with the CubeSat standard. It can be placed either at the bottom or the top of a CubeSat stack. It also has cable channels for customer cable “feed-arounds”.

The MAI-400 can now be ordered with one or two star trackers with a variety of sensor orientations. Inquire for mass, volume and power changes.

Specifications

Performance Item	Specification
Dimensions	10 x 10 x 5.16 cm
Mass	694 g
Momentum Storage @10000 RPM	11.076 mNms
Max Torque	0.635 mNm
Magnetic Dipole Moment	0.108 (0.15 @72% Duty Cycle) Am ²
Magnetometer	+/- 900 μT
Operating Voltage	5 V
Power Consumption	
Input	5 V
Minimum Power	0.82 W (0.164 A)
Avg. Power Use in Nadir Pointing	1.13 W (0.226 A)
1 RW Low Speed Max Torque Power Use	2.05 W (0.41 A)
1 RW High Speed Max Torque Power Use	1.10 W (0.22 A)
Max Instantaneous Current	1.4 A
Command/TLM Interface	RS232, SCI/UART (3.3 V)
Sun Sensor Interface	6 Analog Channels (0 – 3.3 V)
Operating Temperature	-20 to 60 °C
Launch Environment Vibration Spec	14 G rms
Dimensions	10 x 10 x 5.16 cm

*Specifications based on standard MAI-400 Equipment of 1 ADACS computer, 3 reaction wheels, 3 electromagnets, 2 IREHS and a 3-axis magnetometer. Your order may differ.

In accordance the SBA Policy Directive Sec 4 (c) (2), any procurement by US Government Entities is an SBIR Phase III award that is derived from, extends, or completes efforts made under prior SBIR funding agreements and is authorized under 10 U.S.C. 2304(b)(2) or 41 U.S.C. 3303(b) with no further competition pursuant to FAR 6.302-5.

MAI-400 A La Carte

The MAI-400 product comes in a wide range of configurations dependent upon the desires of the spacecraft developer.

Sensors Reaction Wheel Electromagnet ADACS

Single Axis RW w/Driver

Stock #: MAI-000-00010000

Voltage: 5VDC

Max Torque: 0.635 mNm

Momentum Storage: 11.076 mNms@10000 rpm



IREHS

Stock #: MAI-000-00000200

Voltage: 3.3VDC

Current: 40 mA per sensor



ADACS Computer + EM's

Stock #: MAI-400-31100000

Voltage: 5VDC

Magnetic Dipole Moment: 0.108 Am² @ 72% duty Cycle



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ADACS Computer + EM's + 3-Axis RW

Stock #: MAI-400-31130000

Voltage: 5VDC

Magnetic Dipole Moment: 0.108 Am² @ 72% duty Cycle

Max Torque: 0.635 mNm



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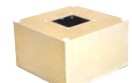
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Complete Integrated ADACS

Stock #: MAI-400-31130200

Voltage: 5VDC

Momentum Storage: 11.076 mNms@10000 rpm

Magnetometer



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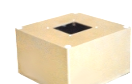
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Q1 2016: Integrated ADACS with Star Tracker

Stock #: MAI-400-31130010

Voltage: 5VDC

Momentum Storage: 11.076 mNms@10000 rpm

Star Tracker, Magnetometer



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