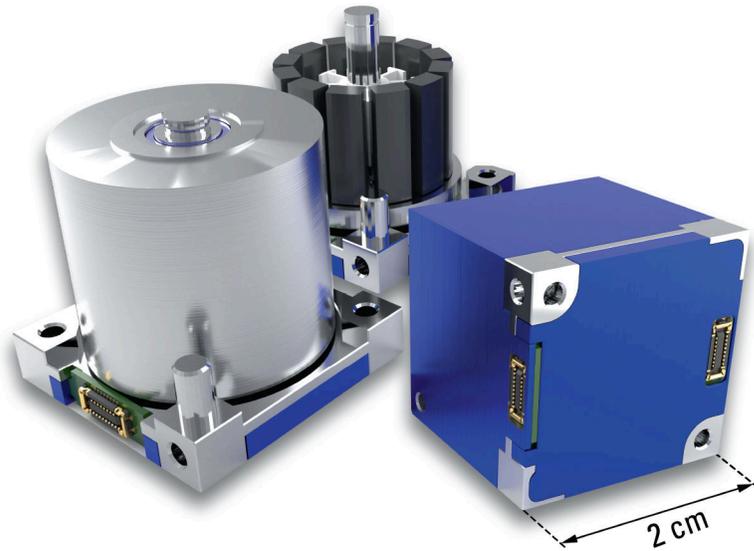


Efficient Reaction Wheels



Unique Features:

- Very low energy consumption
- Simple integration in the electric power system due to small operating and variable input voltages
- Highly integrative and compact system
- Lightweight construction for maximum efficiency
- Integrated electronics enables independent control and saves the use of a separate board

Description:

The compact cyber reaction wheel is especially designed for attitude control used in pico or nano satellites. Due to its cube shape with integrated electronic control it can be used in several configurations. The cyber reaction wheel is provided with vacuum-rated bearings and components resisting a radiation dose of up to 200 Gy.

Applications:

- Pico satellite missions with minimum space requirements
- Single and multi-axis attitude control of nano and pico satellites
- Reaction wheel assemblies for high pointing accuracy and auxiliary stabilization
- Precise dynamic and static slew control for maneuvers
- Flexible and expandable multi-axis assembly design for redundancy down to 1U CubeSats

Features:

- USB Configurable
- I²C, SPI and UART compatible interface
- Software assisted recovery on failure
- Efficient drive control with high torque accuracy
- Orientable in three axes for space-saving designs

Preliminary Specifications:

Performance

Momentum storage (@19,000rpm)	2.0	mNms
Nominal rotational speed	19,000	rpm
Nominal torque	0.1	mNm

Mechanical

Mass	< 20	g
Dimension	20x20x20	mm

Electrical

Supply voltage	5	V
Operating voltage	3.3-8.4	V
Power consumption (nominal)	< 400	mW
Power consumption (peak)	< 1000	mW

Environmental

Nom. ambient temperature	0	°C
Operating temperature	-50 to +50	°C
Survival temperature	-60 to +100	°C

Design lifetime

5 years