

Space Technology

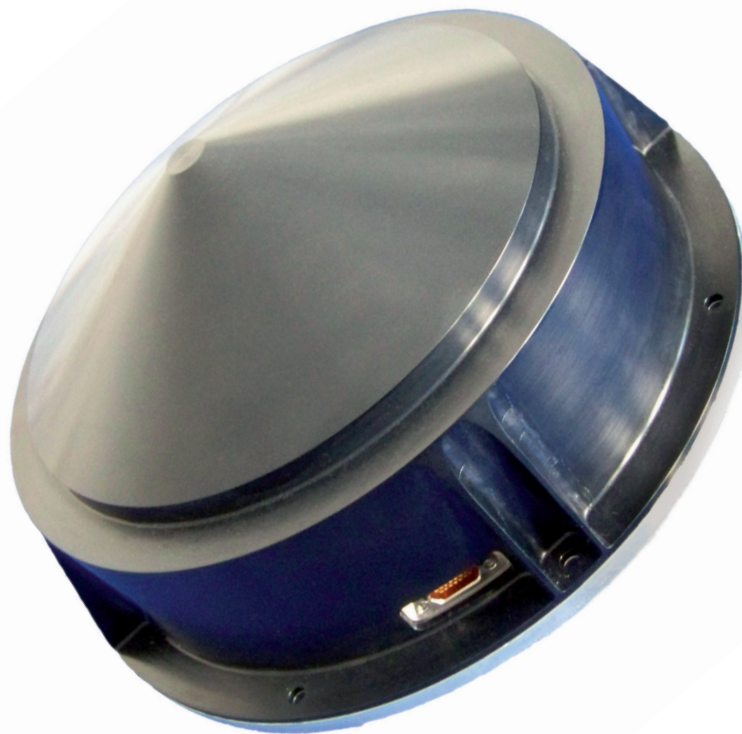
AOCS-Components



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Reaction Wheel RW 250 for Small Satellites

The RW 250 is a **smart** Reaction Wheel with following features:

- Integrated wheel drive electronics
- Different operation modes for speed and acceleration using model based controllers
- High torque and speed stability (low noise)
- Internal compensation of friction and time delays

- Provides extensive housekeepings (e.g.: measured and estimated speed, voltage, current, acceleration reserves etc.)
- Various protective and monitoring mechanisms for:
 - Voltage and current
 - Temperature
 - Data processing

- Low level emitted vibrations, due to the mechanical design and the high level of alignments and balancing

Parameter	Data
Performance:	
Angular momentum	4 Nms @ 7 000 rpm
Nominal rotation speed	6 000 rpm
Max. rotation speed	approx. 7 020 rpm
Nominal torque	0.1 Nm
Mechanical:	
Mass	≤ 2.7 kg
Dimension (with flange)	Ø 197 mm x 92 mm
Moment of inertia (rotating mass)	5.5·10 ⁻³ kgm ²
Electrical:	
Voltage	23 V to 34 V
Power consumption	
Standby (motor off)	< 2 W
Conservation of nominal rotation speed	< 18 W
Nominal torque at nominal speed	< 100 W
Maximum (no limitations)	≤ 150 W
Data Interfaces:	RS485 (others on request)
General:	
Operation temperature range	-20°C to +50°C
Non-operation temperature range	-30°C to +60°C
Design lifetime	7 years in low earth orbit
Storage time	3 years (incl. max. 240 h of ground operation)

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