



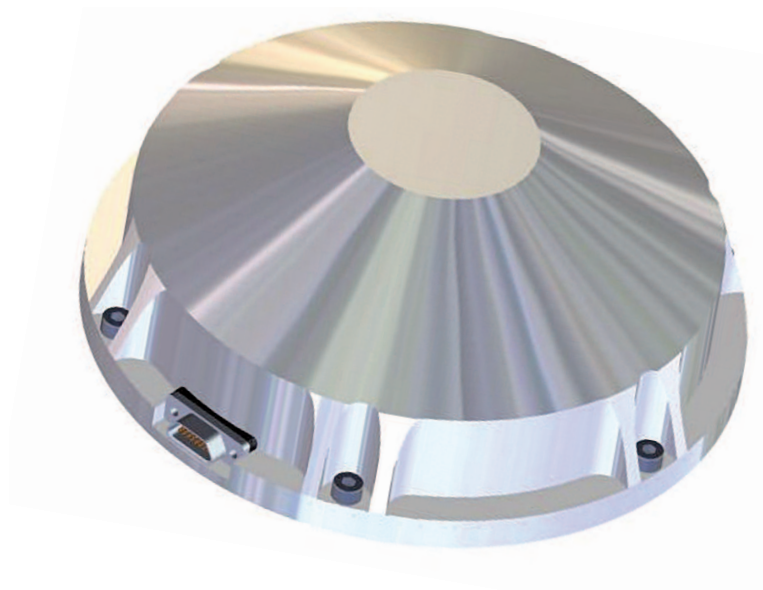
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Space Technology

AOCS-Components



Reaction Wheel RW 150 for Small Satellites

The RW 150 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	1 Nms @ 6 000 rpm
Nominal rotation speed	6 000 rpm
Max. rotation speed	approx. 6 100 rpm
Nominal torque	0.03 Nm
Mechanical:	
Mass	1.5 kg
Dimension (with flange)	Ø 150 mm x 60 mm
Moment of inertia (rotating mass)	$1.6 \cdot 10^{-3} \text{ kgm}^2$
Electrical:	
Voltage	18 V to 34 V
Power consumption	
Standby (motor off)	$\leq 2 \text{ W}$
Conservation of nominal rotation speed	$\leq 5 \text{ W}$
Nominal torque at nominal speed	$\leq 30 \text{ W}$
Maximum (no limitations)	$\leq 50 \text{ W}$
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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