

Space Technology

AOCS-Components



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Reaction Wheel RW 150 for Small Satellites

The RW 150 is a **smart** Reaction Wheel with following features:

- Integrated wheel drive electronics with latch-up protection
- Different operation modes for speed and acceleration using model based controllers
- High torque and speed stability (low noise)
- Provides extensive housekeepings (e.g.: speed, voltage, current, temperatures)
- Internal compensation of friction and time delays
- 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. 7 080 rpm
Nominal torque	0.03 Nm
Mechanical:	
Mass	1.3 kg
Dimension (with flange)	Ø 150 mm x 60 mm
Moment of inertia (rotating mass)	$1.592 \cdot 10^{-3} \text{ kgm}^2$
Electrical:	
Voltage	18 V to 34 V
Power consumption	
Standby (motor off)	$\leq 2.2 \text{ W}$
Conservation of nominal rotation speed	$\leq 10 \text{ W}$
Maximum (no limitations)	$\leq 42 \text{ W}$
Data Interfaces:	RS-485, RS-422 (others on request)
General:	
Operation temperature range	-20°C to +50°C
Non-operation temperature range	-40°C to +65°C
Design lifetime	7 years in low earth orbit
Storage time	3 years (incl. max. 240 h of ground operation)

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