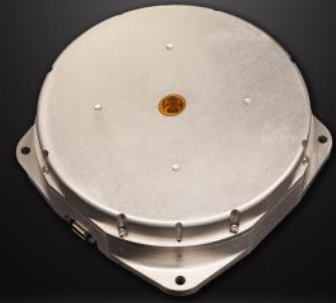


# REACTION WHEEL

## RW-1.0 Data Sheet

Version 3.0 – 2024-08-02



<b>MOMENTUM</b>	Nominal: $\pm 1.0$ Nms
<b>TORQUE</b>	$\pm 100$ mNm (see below torque-box)
<b>CONTROL MODE</b>	Speed or Torque
<b>COMMAND/TELEMETRY</b>	Redundant RS-485
<b>MECHANICAL</b>	Dimensions: 148 mm x 146 mm x 45 mm Mass: 1.4 kg max
<b>IMBALANCE</b>	Static: $< 4$ g $\cdot$ mm (average 2 g $\cdot$ mm) Dynamic: $< 80$ g $\cdot$ mm <sup>2</sup> (average 25 g $\cdot$ mm <sup>2</sup> )
<b>SUPPLY VOLTAGE</b>	24 V to 34 V (nominal 28 V)
<b>POWER (28 V in VACCU)</b>	5.5 W @ 1.0 Nms, steady state 43 W @ 1.0 Nms, +60 mNm torque 84 W @ 1.0 Nms, +100 mNm torque -28 W @ 1.0 Nms, -100 mNm regenerative braking
<b>ENVIRONMENT</b>	Thermal: $-30^{\circ}$ C to $+85^{\circ}$ C (operating) Random Vibration: 20.0 gRMS
<b>RADIATION</b>	TID: 50 krad (board level) Heavy Ion: Up to 50 MeV $\cdot$ cm <sup>2</sup> /mg on most active parts
<b>FLIGHT HERITAGE</b>	Total of 129 units on orbit across 2 generations, with cumulated 525 years since 2016

