

# REACTION WHEEL

## RW4-12 Data Sheet

Version 3.0 – 2024-08-02



<b>MOMENTUM</b>	Nominal: +/-12 Nms
<b>TORQUE</b>	+/-0.2 Nm (see below torque-box)
<b>CONTROL MODE</b>	Speed or Torque
<b>COMMUNICATIONS</b>	Redundant RS-485
<b>SUPPLY VOLTAGE</b>	24 V to 34 V (nominal 28 V)
<b>POWER (IDLE)</b>	<2.0W
<b>POWER (ACTIVE)</b>	<38W at 12Nms steady state <170W during full acceleration <100W regeneration during full deceleration
<b>MECHANICAL</b>	264 mm diameter x 70 mm height; Mass: 5 kg max
<b>THERMAL</b>	Non-Operational: -40° C to +70° C Operational: -20° C to +60° C
<b>VIBRATION (QUAL)</b>	10 gRMS
<b>SHOCK (QUAL)</b>	100Hz – 39g   1kHz – 729g   10kHz – 729g
<b>IMBALANCE</b>	Static: <26.7 g-mm Dynamic: <800g-mm <sup>2</sup>
<b>RADIATION</b>	TID: 60 krad (board level) Heavy Ion: Up to 50 MeV·cm <sup>2</sup> /mg

## FEATURES

- > Designed for long-life and reliability
- > Modular assembly designed for volume manufacturing
- > Low mass and volume envelope
- > Fully demisable
- > 8 PFM units with identical mechanicals to FMs in orbit since Oct 2023

