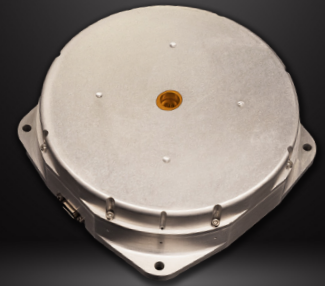


REACTION WHEEL

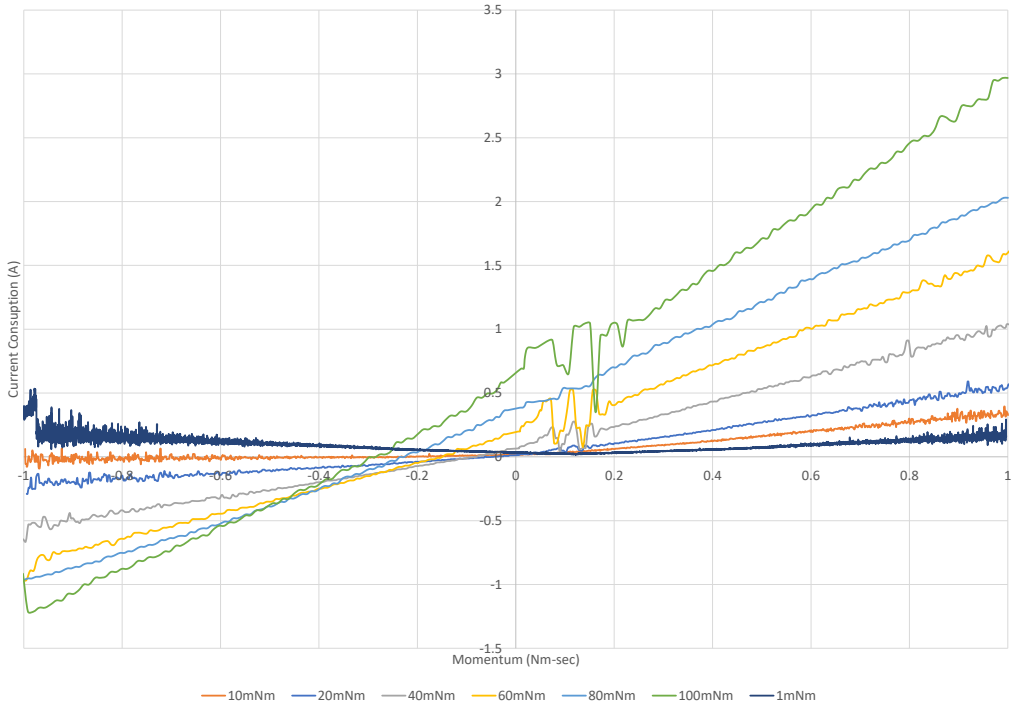
1Nms RW-1.0 Data Sheet

Version 2, 7 April 2022



MOMENTUM	Nominal: 1.0 Nms
TORQUE	100 mNm at 0.8 Nms (at 28 V supply)
CONTROL MODE	Speed or torque, with built-in control CPU
COMMAND/TELEMETRY	Redundant RS-485, with galvanic isolation from primary
MECHANICAL	Dimensions: 154 mm x 146 mm x 45 mm Mass: 1380 g
SUPPLY VOLTAGE	Nominal: 24 V to 34 V, Maximum: 50 V
SUPPLY POWER (28 V IN VACCUM)	43 W @ 1.0 Nms, +60 mNm torque 5.3 W @ 1.0 Nms, steady state 1.4 W @ 0.2 Nms, steady state -28 W @ 1.0 Nms, -100 mNm regenerative braking
ENVIRONMENT	Thermal: -40° C to +70° C (operating) Vibration: >14 gRMS
RADIATION	> 60 krad Total Dose. > 5 mm Al equivalent shield. Heavy ion tested to 50 MeV-cm ² /mg, LDRS tested. Hardware TMR on all flip-flops, EDAC on all RAM
RELIABILITY	Advanced hybrid ball bearings, redundant motor windings, active neutralization of rotor static charge
HERITAGE	9 unit on orbit. Mechanical design from RW3-1.0, with additional 76 Units on orbit
PRICE	US \$80,000 each

Input Current at 28V in Vacuum for Various Torques



RW4-1.0 torque box, in vacuum, 28 V supply

