



VECTRONIC Aerospace

VRW-C-05 REACTION WHEEL



VRW-C-05 REACTION WHEEL

- PI-loop running on a 32-bit microprocessor applying a low-noise, high-efficiency four-quadrant PWM.
- Standard asynchronous SCI on RS422/RS485 and CAN Interface
- Full-duplex configuration or half-duplex bus architecture
- Baud rate adjustable up to 1Mbaud
- Modular design that allows easy customization

HIGH MOMENTUM YET LIGHT WEIGHT FROM VECTRONIC AEROSPACE

The VRW reaction wheel series comprises more than 100 years of in-orbit flight experience.

The VRW-C-05 is a highly precise and customizable wheel, utilizing a model-supported PI-loop and offering speed and torque control. Simultaneously, thermal and over-voltage protection circuits ensure safety. It delivers a nominal angular momentum of 0.6 Nms. With a nominal in-orbit lifetime of 45,000+ hours, this is a dependable solution for your mission-critical needs.

TECHNICAL DATA

Dimensions: 96 mm x 96 mm x 60 mm

Mass: 1.3 kg

Moment of Inertia (rotor): $9.55 \cdot 10^{-4} \text{ kgm}^2$

Power consumption:

@steady state, no speed <1.3 W

@steady state, max. speed <9.0 W

@max. speed, @50mNm <65 W

PERFORMANCE

Max. speed: $\pm 6000 \text{ rpm}$

Angular momentum: 0.6 Nms

Max. torque: $\pm 20/50 \text{ mNm}$

Speed control loop accuracy (2σ): 0.1 rpm

Unbalance static/dynamic: < 3 gmm / 100 gmm²