MINERVA DYNAMICS

Product Datasheet

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TORDYN-242-18

Tor-Dyn Series · High-Dipole Rod Magnetorquer

Overview

The TORDYN-242-18 is a Hiperco 50A-core rod magnetorquer delivering a nominal dipole moment of 24,2 Am² at 16 V for CubeSat and small-satellite attitude control: detumbling, momentum dumping and fine pointing in low Earth orbit.

Its precision-wound 18-layer copper coil keeps power consumption at 1,81 W while staying well below core saturation, giving a linear, repeatable dipole response across the 0–16 V drive range.

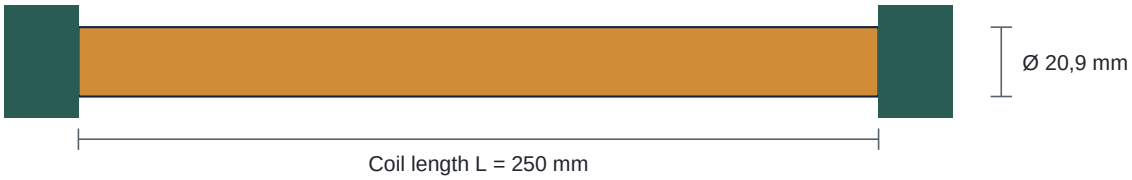


24,2 Am²	1,81 W	494 g
Dipole moment	Power at 16 V	Mass

Specifications

PERFORMANCE	
Magnetic dipole moment (nominal)	**24,2 Am²**
Magnetic gain	**213,4 Am²/A**
Dipole linear voltage range	**0 – 16 V**
Core material	**Hiperco 50A (Fe-Co-V)**
ELECTRICAL	
Nominal input voltage	**16 V**
DC resistance (20 °C)	**141,2 Ohm**
Current at nominal voltage	**113 mA**
Power consumption (typical)	**1,81 W**
Coil layers	**18**
MECHANICAL	
Rod length	**250 mm**
Outer diameter	**20,9 mm**
Mass	**494 g**
Envelope shape	**Cylinder**

Outline (not to scale)



Features

- High dipole moment with low power draw and linear response.
- Hiperco 50A core for a large saturation margin; even-layer winding with both leads at one end.
- Compatible with standard small-satellite power buses; PWM-driveable.
- Customized versions: we can manufacture in different geometries and power consumptions for your needs.
- Delivery within 1 month. TRL 6.

Values are nominal at 20 °C. Specifications are subject to change without notice. Customized versions available on request.