MINERVA DYNAMICS

Product Datasheet

minervadynamics.net

TORDYN-140-24

Tor-Dyn Series · High-Dipole Rod Magnetorquer

Overview

The TORDYN-140-24 is a Hiperco 50A-core rod magnetorquer delivering a nominal dipole moment of 14,0 Am² at 23 V for CubeSat and small-satellite attitude control: detumbling, momentum dumping and fine pointing in low Earth orbit.

Its precision-wound 24-layer copper coil keeps power consumption at 0,94 W while staying well below core saturation, giving a linear, repeatable dipole response across the 0–23 V drive range.

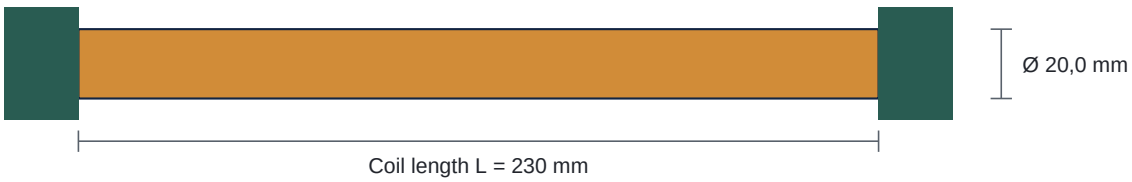


14,0 Am²	0,94 W	412 g
Dipole moment	Power at 23 V	Mass

Specifications

PERFORMANCE	
Magnetic dipole moment (nominal)	**14,0 Am²**
Magnetic gain	**341,4 Am²/A**
Dipole linear voltage range	**0 – 23 V**
Core material	**Hiperco 50A (Fe-Co-V)**
ELECTRICAL	
Nominal input voltage	**23 V**
DC resistance (20 °C)	**560,8 Ohm**
Current at nominal voltage	**41 mA**
Power consumption (typical)	**0,94 W**
Coil layers	**24**
MECHANICAL	
Rod length	**230 mm**
Outer diameter	**20,0 mm**
Mass	**412 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.