

MAGNETIC **TORQUE ROD-4.0**

Quick Detumbling.
Reliable Wheel Unloading.
Simplified Integration.

PS-MTQ-4.0 is a high-performance magnetic torque rod designed for microsatellite missions requiring fast detumbling, reliable reaction wheel unloading, and simplified ADCS integration.

KEY HIGHLIGHTS

Fast Detumbling with Low Power Consumption

Enables detumbling of a 5 kg·m² satellite from 10°/s in less than three hours, consuming only 1.25 W.

Integrated Driver & Microcontroller

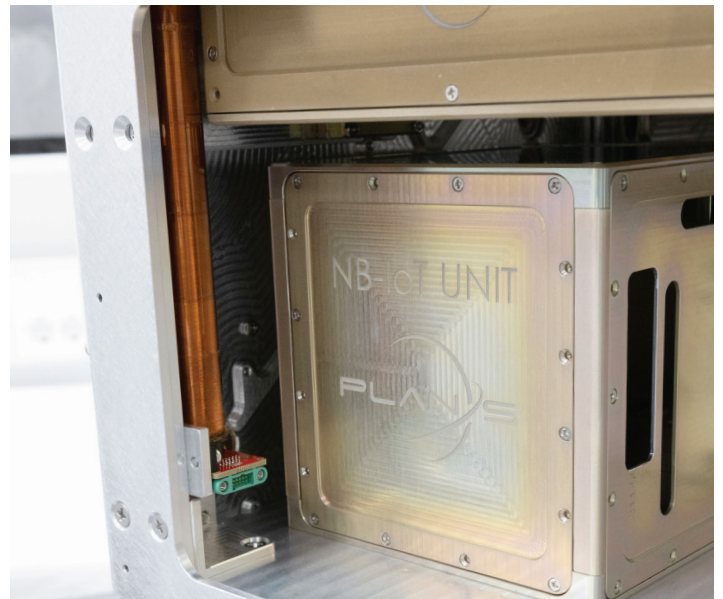
Removes the need for a separate driver card or DAC, helping reduce electronics complexity, harnessing effort, and integration risk.

High Magnetic Moment for Microsatellite Platforms

Delivers 4 A·m² magnetic moment to support detumbling and reaction wheel unloading in microsatellite-class missions.



Delivering 4 A·m² magnetic moment from a compact, driver-integrated architecture, PS-MTQ-4.0 helps stabilize microsatellites efficiently after deployment while reducing the need for additional driver electronics.



MISSION BENEFITS

High & Linear Magnetic Gain

Compared to products of similar length PS-MTQ-4.0 has a much higher magnetic dipole moment and a completely negligible residual magnetization.

Integrated Driver & Microcontroller

PS-MTQ-4.0 can be driven directly by a digital computer via CAN and RS-485 interfaces that enable simple integration and provide signal integrity even at large cable length. Power is received via just a constant 5V interface.

Built-In Charge/Discharge Calculation

Just command the required magnetic moment, PS-MTQ-4.0 will calculate the rest.

TECHNICAL FEATURES

Magnetic Moment	4 A·m ²
Supply Voltage	5 V
Maximum Current	225 mA (at room temperature)
Interface	1x CAN & 1x RS-485
Connector	Harwin Gecko
Mass	200 grams
Dimensions	160 x 35 x 20 mm (including driver board)

HERITAGE / QUALIFICATION

- ▶ **Status:** Fully qualified; environmental qualification campaign complete.
- ▶ **TRL:** 6.
- ▶ **First Flight:** Scheduled October 2026.

STANDARDS & COMPLIANCE

- ▶ NASA-GEVS (GSFC-STD-7000) environmental verification.
- ▶ SpaceX Rideshare Payload User's Guide (Version 10, September 2024) launch-environment compatibility.

