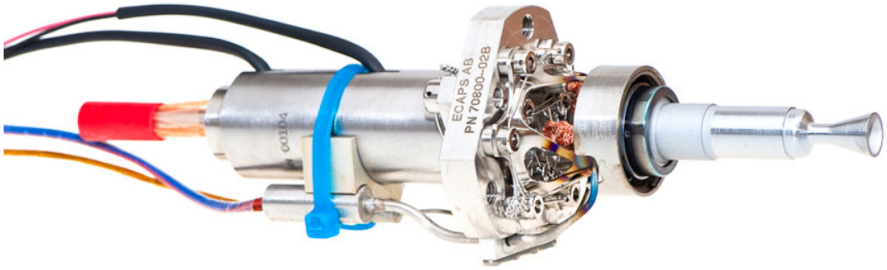
1N GP Thruster



1N GP Thruster

Bradford ECAPS's **1N GP Thruster** is designed for attitude and orbit control of small-sized satellites. This in-development model is a variant of the **1N HPGP Thruster** demonstrated aboard the **PRISMA** spacecraft and the **SkySat** series, for cost-critical missions where affordability takes priority over performance.

- **Non-toxic propellant** makes for easier and less costly integration on secondary or 'piggy-back' missions.
- Propellant loading is simple, fast and avoids the cost associated with loading hydrazine. Allows the operator to spend less time on ground operations and more time on space operations.
- 'Fuel at the factory' – be ready for launch vehicle integration upon arrival at the launch pad.
- Allows for more secondary or 'piggy-back' launch opportunities, especially missions where there is concern about the hazards of hydrazine and its risks to the primary payload.
- Allows for more capable missions than spacecraft without propulsion.
- Allows for **more agile mission profiles** than electric propulsion. Spacecraft take significantly less time to execute maneuvers and orbit changes.
- Although not as high as the **1N HPGP** , the **1N GP** still provides equivalent to greater performance and storage density over hydrazine.
- **Less costly thruster system** (equivalent to hydrazine) allows for lower cost system build.

The **1N GP thrusters** can be provided individually or as an integrated system. For instance, each **SkySat** propulsion system consisted of four **1N HPGP** thrusters along with tanks, flow regulators and other avionics. **Get in contact today** to talk to us about all our small sat solutions!

Specifications Table

Thruster Type	GP
Propellant	LMP-103S/LT
Thrust Class	1 N
Primary Operational Mode	Δ v
Inlet Pressure Range	4.5 - 22 Bar

Thrust Range	.25 - 1 N
Nozzle Expansion Ratio	100:1
Steady State ISP (vacuum) Typical	1900 - 2230 Ns/Kg (194 - 227 s)
Density Impulse (vacuum)	2318 - 2721 Ns/L
Minimum Impulse Bit	≤ 70 mNs
Overall Length	178 MM
Mass	0.38 KG
FCV Type	Solenoid
- No of Seats	Dual Seat
- Pull-in Voltage	28 ± 4 VDC
- Holding Voltage	10 ± 1 VCD
- Coil Resistance (each coil)	190 Ω
Nominal Reactor Pre-heating Voltage	28 VDC
Regulated Reactor Ore-heating Power	8 - 10 W
Target Life - Qual. Level	
Pulses	12,000
Propellant Throughput	5 - 8 kg
Longest Continues Firing	5 minutes
Accumulated Firing Time	5 hours
Firing Sequences	200
Demonstrated Life	
Pulses	4,272
Propellant Throughput	1.2 kg
Longest Continues Firing Time	5 minutes
Accumulated Firing Time	1.5 hours
Firing Sequences	55
Maturation Level	TRL 4/5
Current Status	
	EQM in Manufacturing