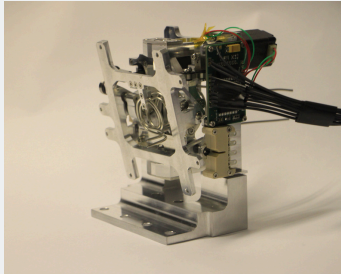


TPM Thruster Pointing Mechanisms



LMO's TPM technology enables 2-axis high precision steerability of chemical and electrical thrusters. The product range covers TPMs solutions suitable for the small and medium satellite applications. For chemical thrusters, LMO's TPMs are available for standard and new monopropellant thruster technologies with a broad thrust range. For electrical thrusters, the mechanisms cover a range of sizes from 300W to 1kW engines.

Chemical Propulsion

LMO's SHAMAN-C Series are built around commercial chemical thrusters, designed mainly for delta-V manoeuvres:

- Compatible with HTP, LMP-103S, Water, Hydrazine
- Compatible with thrusters in the range 0.1N to 5N

Electrical Propulsion

LMO's SHAMAN-E Series are designed for HET and GIE electric propulsion applications

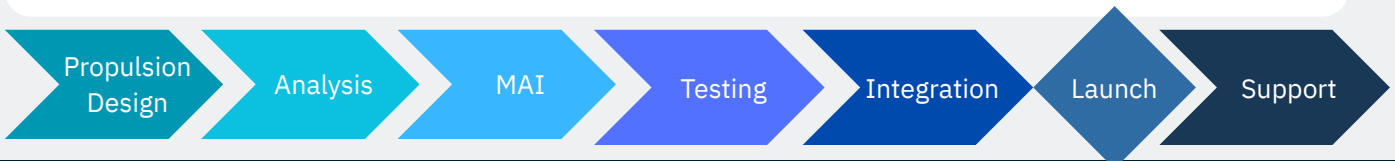
- Compatible with Xenon, Iodine, Argon and Krypton
- Compatible with engines from 300W to 1kW class

Driver electronics

All TPMs can be provided with a dedicated driver with the following interfaces:

- Digital interface options: CAN, RS-422
- Connector interface options: 9-way or 15-way D-Sub connectors
- Operating voltage from 12 to 28V (unregulated)
- Power required: 1W to 2W

Performance	SHAMAN-C Series	SHAMAN-E Series
Propulsion	Chemical	Electrical
Steering Range	± 10 degrees (2-axis)	± 8 to 15 degrees (2-axis)
Pointing Accuracy	0.3 degrees	0.3 degrees
Maximum volume excluding thruster (L,W,H)	Minimum: 81 x 81 x 58.8 mm Maximum: 106.3 x 100 x 16.8 mm	Minimum: 97.6 x 97.5 x 87 mm Maximum: 480 x 480 x 190 mm
Mass (mechanism only, inc. harness)	From 0.1 to 1.0 kg	From 0.4 to 9.5 kg
Payload mass (thruster)	Up to 0.7 kg	Up to 8 kg
Power (Mechanism only)	From 6 to 8.5W	From 6 to 38W
Operating Temperatures (Max Range)	10 to 50°C	-30 to 70°C
Non-Operating Temperatures (Max Range)	-20 to 100°C	-30 to 100°C



Let us keep in touch

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