Low-pressure/High-pressure Cold Gas Thruster (CGT)

Reference: TD-DE-1090

TECHNOLOGY DESCRIPTION

Two versions of cold gas thrusters, pressurised and unregulated systems, have been developed for satellite attitude control. In regulated systems, a low-pressure cold gas thruster (LP-CGT) can be operated at constant pressure conditions, providing predictable and repeatable thrust performance. The fast-switching thruster enables very small pulse peaks of 110 µNs. The miniature valve produces very small shocks when actuated, making it well suited for shock and noise sensitive applications. The high pressure configuration of the Cold Gas Thruster (HP-CGT) allows operation in blow-down mode when connected directly to the fuel tank and enables high thrust (up to 4 N).
Both CGT configurations consist of an inlet port, inlet filter, miniature valve, a mounting body and thruster. Depending on the requirements, the CGT design can be mounted on heated brackets or fitted with special heating elements to maintain known operating conditions. Only stainless steel and FKM materials come into contact with the gas, which ensures good gas compatibility and enables a very wide range of applications.

INNOVATIVE ASPECTS

LP-CGT Characteristics:
Operating Media: He, N2, Xe, Kr / Inlet Pressure MEOP: 1 to 6 bar / Thermal Range non-op: -35°C to +95°C

HP-CGT Characteristics:
Operating Media: N2, Ar, Kr, Xe / Inlet Pressure MEOP: 186 to 300 bar / Thermal Range non-op: -10°C to +80°C

TECHNOLOGY READINESS (in space application)

TRL 9 (2024)

COUNTRY OF ORIGIN

Germany

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06/2024

TAGS #cold gas #thruster #low/high press. #gas compatib. #fast-switching #shock-sensitive

APPLICATION AREAS

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