

PPS[®] 5000 [Stationary plasma thruster]

- Designed for orbit raising and station-keeping
- 40% weight savings versus conventional propulsion
- Excellent thrust-to-electrical power ratio

PPS®5000

Features

Stable operation over a wide power range: 2,500 to 5,000 W
Wide operating temperature range: -65°C / 310°C
Design optimized to reduce thermal flux toward satellite
Reduced beam divergence (40°)
The PPS®5000 is delivered with its xenon flow control system



Heritage

The PPS®5000 dual-mode stationary plasma thruster (Hall effect) draws on Safran Spacecraft Propulsion's long experience with electric propulsion. It is designed to handle satellite orbit raising and station-keeping.

Very high performance

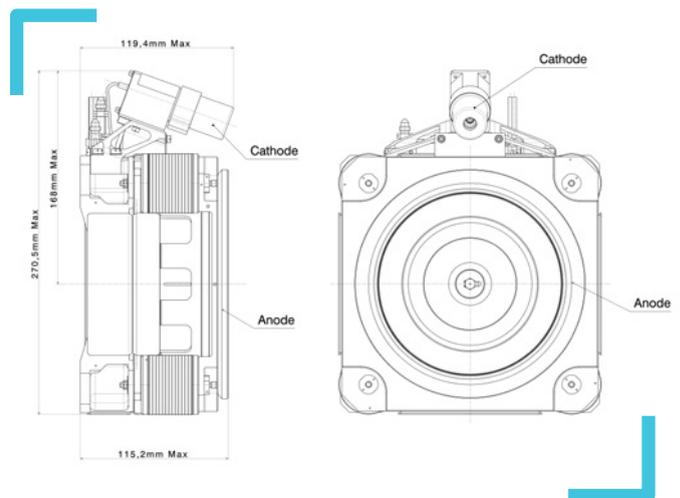
The major advantage of the PPS®5000 is of course its very high specific impulse, which allows significant weight savings versus platforms using conventional chemical propulsion. It also offers an excellent thrust-to-electrical power ratio, which enables reducing operating time or the number of thrusters needed. It can be delivered as part of an electric propulsion subsystem, including all thermal control functions.

How it works

Thrust is generated by the high-speed ejection of xenon ions. The ions are accelerated by an electrical field obtained by the magnetic containment of electrons: the Hall effect. The ejected ions are neutralized to avoid transferring an electrical charge to the satellite.

Upcoming missions

The PPS®5000 has been selected by Airbus Defence and Space and Thales Alenia Space for use on their Eurostar Neo and Spacebus Neo communications satellite platforms, respectively. It will handle both orbit raising and station-keeping duties. It has also been selected by Boeing company for use in a cluster of three PPS®5000 thrusters, operating simultaneously for orbit raising, at a power rating of 5 kW.



SPECIFICATIONS

Nominal power (W)	2,500 - 5,000
Fuel	xenon
Thrust (mN)	150 - 300
Specific impulse (s)	1,730 - 2,000
Total impulse (MN.s)	15
Number of cycles	9,415
Discharge current (A)	6.67 to 16.67
Efficiency (%)	50
Power supply voltage (V)	300 to 400
Xenon supply system pressure (bar)	1.85 to 3.00
Weight (including xenon flow control system) (kg)	12.3