

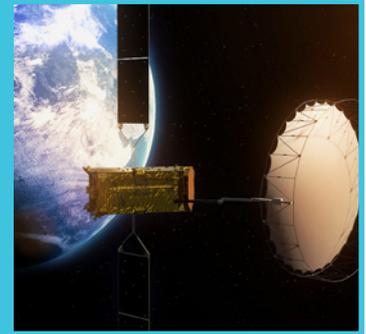
PPS® 1350 [Stationary plasma thruster]

- Designed for orbit-topping and station-keeping
- 40% weight savings versus conventional propulsion
- Excellent thrust-to-electrical power ratio
- Set a record for cumulated operating time in space

PPS®1350

Features

- Stable operation over a wide power range: 500 to 2,500 W
- Low startup power
- Proven performance at extreme temperatures, from -45°C to +160°C
- Reduced beam divergence (40°)
- The PPS®1350 is delivered with its xenon flow control system



Heritage

The PPS®1350 stationary plasma thruster (Hall effect) draws on Safran Spacecraft Propulsion' long experience with electric propulsion. It is designed to handle orbit-topping, station-keeping and deorbiting duties for satellites and other spacecraft.

Very high performance

The major advantage of the PPS®1350 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.

How it works

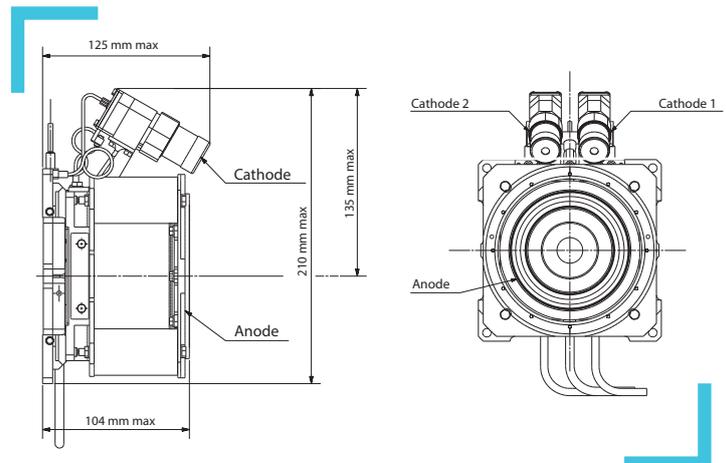
Thrust is generated by the high-speed ejection of xenon ions. The ejected ions are neutralized to avoid transferring an electrical charge to the satellite. The ions being ejected are also neutralized as they leave the thruster to avoid giving the satellite an electrical charge.

In orbit experience

The PPS®1350 amply demonstrated its capabilities during ESA's Smart-1 probe's mission from Earth orbit into orbit around the Moon: 5,000 hours cumulated operating time in space

Four of these thrusters handle North/South station-keeping duties on the Alphasat satellite, launched in 2013.

The PPS®1350 was selected by Space Systems Loral in 2016, and will be used on the company's communications satellites for station-keeping, and for part of the orbit-topping operation.



SPECIFICATIONS

| | PPS®1350-S | PPS®1350-E |
|---|--------------|--------------|
| Nominal power (W) | 1,500 | 2,500 |
| Fuel | xenon | xenon |
| Thrust (mN) | 90 | 140 |
| Specific impulse (s) | 1,660 | 1,800 |
| Total impulse (MN.s) | 3.4 | 3.4 |
| Number of cycles | 7,300 | 7,300 |
| Discharge current (A) | 4.28 | 7.00 |
| Efficiency (%) | 50 | 50 |
| Power supply voltage (V) | 350 | 355 |
| Xenon supply system pressure (bar) | 2.50 to 2.80 | 2.90 to 3.00 |
| Weight (including xenon flow control system) (kg) | 4.8 | 4.8 |