

XENON FEED SYSTEM PRODUCT SHEET



The Xenon Feed System (XFS) is designed for working in the structure of Electric Propulsion Systems (EPS) with the Hall-effect thrusters. XFS fulfills two main tasks: decreasing the high pressure to the working pressure and feed the required values of the mass flow rates into electrical propulsion thrusters.

Most of the components (solenoid valves, accumulator tank, flow restrictors, fill and drain valve etc.) are designed and manufactured in-house, which shortens the time of production and allows adapting

the feed system to the required parameters.

Several variations of the storage and feed systems for different types of Hall thrusters have successfully passed the entire test cycle (including mechanical, functional and thermal vacuum).

Flight models of these systems, after successful acceptance tests, were sent to the customer as a part of the EPS and currently they are successfully functioning on board the spacecraft.

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Specifications

Propellant	Xenon, Krypton
Maximum operating pressure, bar	180
Anode line flow, mg/s	0 to 3
Cathode line flow, mg/s	0 to 0.5
Temperature accuracy	±1%
External leakage, sccs of GHe	$<1 \times 10^{-6}$
Internal leakage, sccs of GHe	$<1 \times 10^{-5}$
Dry mass, kg	1.1
Dimensions, mm	145 x 127 x 115
Operating temperature range, °C	-20 to +60
Mechanical interface	4 bolts M5 (customized to any requirements)
Fluidic interface	AS4395 G 02 standard, 5/16-24 UNJF thread (customized to any requirements)
TRL	9