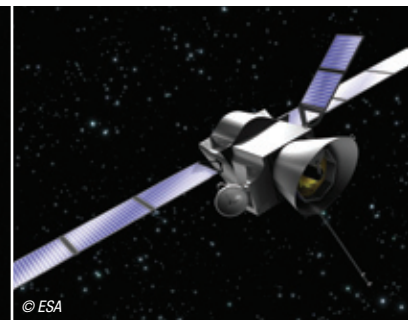




## Proportional Flow Control Valve (PFCV)

The 51E339 Proportional Flow Control Valve (PFCV) is an all welded, normally-closed, solenoid-type valve that can provide outlet flow control or pressure regulation in proportion to the input current, within its operating range. The PFCV can be operated directly in an open-loop control mode, or automatically in a closed-loop control mode with a downstream telemetry feedback to control the input current.



# Proportional Flow Control Valve (PFCV)

Characteristics	
Parameter	Performance
Materials of Construction	Stainless Steel and Vespel
MEOP / Proof / Burst Pressure	186 / 279 / 465 bar (2700 / 4050 / 6750 psia)
Internal Leakage	$< 1 \times 10^{-4}$ sccs GHe over inlet pressure range
External Leakage	$< 1 \times 10^{-6}$ sccs GHe
Inlet Pressure Range in Regulation Mode	6.89 – 186 bar (100 – 2700 psia)
Outlet Pressure Range in Regulation Mode	2.28 – 2.55 bar (33 – 37 psia) over inlet pressure range and over 6 – 30 mg/s Xe flow range
Inlet Pressure Range in Flow Mode	2.8 -0186 bar (40 - 2700 psia)
Outlet Pressure Range in Flow Mode	0 – 2.8 bar (0 – 40 psia) over inlet pressure range up to 200 mg/s Xe flow range
Flow Range	0 – 30 mg/s Xe typical, >200 mg/s Xenon maximum at 186 bar (2700 psia)
Input Current Range	0 - 140mA maximum sustained (full open) 75mA minimum opening
Throttle Rate	<25 ms
Response Time	<10 ms open or closed
Coil Resistance	74.5 ± 2 ohms at 21°C (70°F)
Flow Gain	<2.5 mg/s Xe per mA at 2.8 bar (40 psia) inlet
Filtration	25 microns absolute inlet
Shock	3000g / 5000 Hz in plane, 6000g / 5000 Hz out of plane
Random Vibration	19.2 grms in plane 24.7 grms out of plane
Thermal	-34 to 100°C (-30 to 212°F) operational -40 to 125°C (-40 to 257°F) non-operational
Life	1,000,000 cycles
Mass	115 g (0.25 lbm) max
Heritage	AEHF, BepiColombo, SGEO, TacSat-2, FalconSat-5,6

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