

In-line Flow Control Valve

- Low Pressure Solenoid Valve



The well-established SVS01 is family of In-line Flow Control Valves which have been flying for more than twenty years.

The valves are mono-stable solenoid type devices, using a single coil to energise the movement of a suspended sealing armature. This assembly is located using a diaphragm spring to eliminate sliding fit issues.

The armature to seat profiles have been designed to minimise flow discontinuities, thereby reducing the susceptibility to contamination induced failures. It also uses a flat faced seal to reduce the risk associated with valve internal leakage due to a high cycle life.

When in the unpowered state, system pressure forces and a spring, work together to keep the

armature held in the closed position.

The coil resistance, inlet filter rating, seal material and mechanical interfaces are all adjustable to suit the customer requirements.

The valve has flown on a variety of spacecraft, including:

- Giove (Galileo test bed)
- SGEO
- BepiColombo

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Operating Media	GXe, GN ₂ , GHe, CF ₄ , Butane, Propane
Maximum Operating Pressure	20bar
Proof Pressure	30bar
Burst Pressure	50bar
Flow Rate / Pressure Drop	<0.05mbar@ 5.5mg/s GXe at 20°C
Internal Leakage	<1 x 10 ⁻⁴ scc/s GHe at 1.5 bar
External Leakage	<1 x 10 ⁻⁶ scc/s GHe at 1.5 bar
Response	< 5ms open/close
Electrical Interface	Flying leads
Operating Cycle Life	2,000,000 cycles
Filter Rating	25 µm absolute
Wetted Materials	AISI304L, Radiometal 4550, Silicone/EPDM Rubber
Hardware Mass	35 gram
Envelope	16mm OD x 21mm + interfaces
Options	Interfaces can be fully customised
Input Voltages	24 Vdc - 32 Vdc
Coil Power	4W typical, depending on coil and voltage
Fluidic Interface	Stub tube (1/4" or 1/8") or threaded AS4395 fitting
Technology Readiness Level	Flight Qualified, TRL9



Nammo (U.K.) Limited,
36 Central Way, Cheltenham Trade Park,
Cheltenham, GL51 8LZ, UK.

Nigel Kay
General Manager
+44 7714 322866
nigel.kay@nammo.com