

## ISOLATION VALVES

MONOPROPELLANT, SINGLE SEAT,  
LATCHING SOLENOID AND NORMALLY  
CLOSED SOLENOID

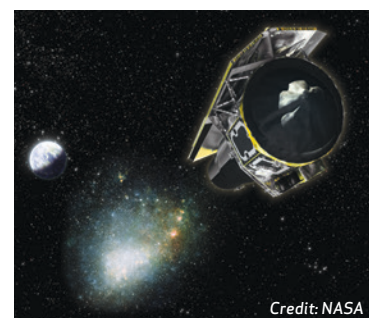
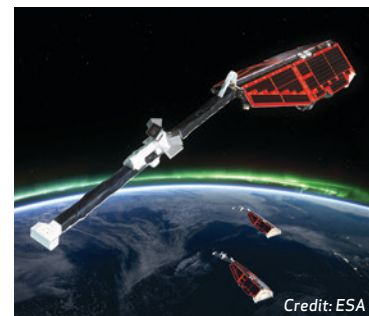


Moog supported high profile SDI programs such as SCIT, THAAD, ASAT and GBI/EKV by designing very small, light, fast-acting solenoid valves. Moog applied this technology from these programs to successfully develop and qualify a family of light-weight, high-pressure isolation valves for cold gas and high-purity xenon propellant management systems. The latch valves utilize permanent magnetics to hold the valve element in the last (open/closed) commanded

position. The solenoid valve is a normally closed design. These valve designs have been used in various space propulsion and operational systems in support of planetary and GEO satellite applications.

### KEY ADVANTAGES

- All welded design to prevent external leakage
- Vespel® and stainless steel construction
- Inlet filter



# ISOLATION VALVES

## PERFORMANCE CHARACTERISTICS

Characteristic



1/8 inch line, Latching Solenoid



1/4 inch line, Latching Solenoid



1/8 inch line, Normally Closed Solenoid

Characteristic	1/8 inch line, Latching Solenoid	1/4 inch line, Latching Solenoid	1/8 inch line, Normally Closed Solenoid
Max Operating Pressure, MEOP	2,700 psia (186 bar)	2,700 psia (186 bar)	2,700 psia (186 bar)
Proof Pressure	4,050 psia (279 bar)	6,000 psia (414 bar)	4,050 psia (279 bar)
Burst Pressure	8,100 psia (558 bar)	10,000 psia (689 bar)	6,750 psia (465 bar)
Flow vs. Pressure Drop	< 15 psid (1 bar) at 20 slpm GN <sub>2</sub> and 1,000 psia (69 bar) inlet, 70F	< 4.5 psid (0.31 bar) at 80 mg/s Xe and 50 psia (3.4 bar) inlet, 70F	< 15 psid (1 bar) at 4.5 slpm GN <sub>2</sub> and 1000 psia (69 bar) inlet, 70F
Operating Voltage Range	22 to 42 Vdc	25 to 32 Vdc	26 to 52 Vdc, 8.6 hold open
Response Time	< 50 msec	< 75 msec	< 10 msec
Power Consumption	13.5 watts at 28 Vdc, 70F	10.6 watts at 28 Vdc, 70F	10.5 initial watts, 1 at hold voltage, 70F
Leakage, Internal	< 3 scc/hr GHe	< 3 scc/hr GHe	< 3 scc/hr GHe
Leakage, External	< 1E-6 scc/s GHe	< 1E-6 scc/s GHe	< 1E-6 scc/s GHe
Cycle Life	18,000 cycles	13,000 cycles	1,000,000 cycles
Weight	< 0.375 (170) lbm (g)	< 0.75 (340) lbm (g)	< 0.25 (115) lbm (g)
Inlet Filtration [micron absolute rating]	5	25	25
Operating Temperature Range	50 to 140 °F (10 to 60 °C))	14 to 151 °F (-10 to 66 °C))	-207 to 160 °F (-133 to 71 °C))
Back-EMF suppression Diodes	N/A	Available, 33Vdc clip	N/A
Representative Model Numbers	-051-212B	-051E311	-051E378

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