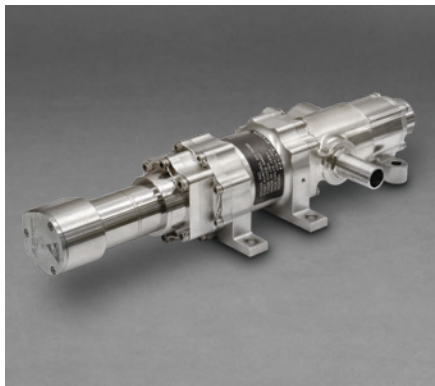


ECLSS HIGH PRESSURE VALVES



Moog produces a variety of fluid control components used in human space vehicles as part of their environmental control and life support systems (ECLSS). The components include mechanical pressure regulators, manual and electrically actuated valves, and passive components such as quick disconnects. These components are used in high- and low-pressure breathing gas control systems, as well as liquid fluid control for thermal management.

KEY FEATURES

- High pressure O₂ and N₂ at 4500 psi, with mass flow rates of 0.02 lbm/sec (O₂ and N₂)
- Electrically-actuated valves are 28 VDC devices that use brushless DC motors and solenoids to drive the units open or closed, and include normally-open / normally-closed and latching designs.



ECLSS HIGH PRESSURE VALVES

PERFORMANCE CHARACTERISTICS



Valve	Model 50-1472 Tank Valve Assembly	Model 50-1480 Pressure Regulator	Model 50-1473 Isolation Valve	Model 50-1475 / 50-1478 Quick Disconnect
Description	Dual manual latch valves, relief valve, pressure gauge, fill valve	Two stage with relief valve	BLDC motor-driven isolation valve	Passive and active halves
Media	Oxygen and Nitrogen	Oxygen and Nitrogen	Oxygen and Nitrogen	Oxygen and Nitrogen
Unit Mass	8.8 lbm	12.0 lbm	4.5 lbm	5.9 lbm
Dimensions (L W H)	7.3" x 5.9" x 6.8"	9.5" x 3.9" x 5.9"	10" x 4" x 2"	5.7" x 2.5" x 2.5"
MEOP	4500 psia	4500 psia	4500 psia	4500 psia
MDP	4500 psia	4500 psia	4500 psia	4500 psia
Pressure Range, Inlet	0 – 4500 psia	250 – 4500 psia	0 – 4500 psia	0 – 4500 psia
Regulated Pressure, Outlet	N/A	100 ± 10 psia	N/A	N/A
Lockup Pressure	N/A	115 psia	N/A	N/A
Factors of Safety	Proof: 1.5x MEOP; Burst: 2.5x MEOP	Proof: 1.5x MEOP; Burst: 2.5x MEOP	Proof: 1.5x MEOP; Burst: 2.5x MEOP	Proof: 1.5x MEOP; Burst: 2.5x MEOP
Maximum Pressure Drop	100 psid (@ max temp, max flowrate)	N/A	10 psid max @ 1 ACFM N ₂	54 psid (@ max. temp, max. flowrate)
Maximum Flowrate	0.0184 lbm/sec N ₂ ; 0.009 lbm/sec O ₂	0.0184 lbm/sec N ₂ ; 0.0184 lbm/sec O ₂	0.0184 lbm/sec N ₂ ; 0.011 lbm/sec O ₂	0.0184 lbm/sec N ₂ ; 0.009 lbm/sec O ₂
Leakage Internal (@ MDP, GHe)	< 1 x 10 ⁻³ scc/sec	< 1 x 10 ⁻³ scc/sec	< 1 x 10 ⁻³ scc/sec	N/A
Leakage External (@ MDP, GHe)	< 1 x 10 ⁻³ scc/sec	< 1 x 10 ⁻³ scc/sec	< 1 x 10 ⁻³ scc/sec	< 1 x 10 ⁻³ scc/sec
Temperature (Operating)	-40°F – 160°F	-40°F – 160°F	-40°F – 180°F	-11°F – 160°F
Random Vibration	22 Grms	22 Grms	40 Grms	22 Grms
Shock	2880 G	2880 G	3500 G	2880 G
Cycle Life	50 cycles	13000 cycles (outlet); 500 cycles (inlet)	1200 cycles	100 cycles (mate-demate)
Wetted Materials	Monel, Inconel, Vespel	Monel, Inconel, Brass, BeCu, Vespel	Monel, Inconel, Vespel	Monel, CRES, Vespel
Filtration	25 micron absolute	55 micron absolute	25 micron absolute	N/A
Operating Voltage	N/A	N/A	28 VDC nominal	N/A
Current Draw	N/A	N/A	0.45 Amp min, controller limited	N/A



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